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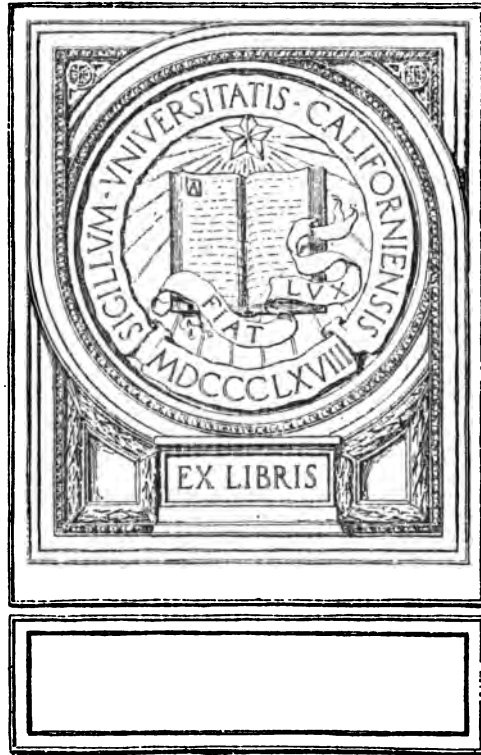
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FOREIGN EXCHANGE



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FOREIGN EXCHANGE

A STUDY OF THE EXCHANGE MECHANISM OF COMMERCE

BY

HARRY GUNNISON BROWN

ASSISTANT PROFESSOR OF ECONOMICS IN THE UNIVERSITY
OF MISSOURI

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PREFACE

THIS small volume, also published as Part I of my *International Trade and Exchange*, deals chiefly with the subject of *Foreign Exchange*, though it also contains two introductory chapters on *Laws of Money* and *The Nature of Banking*, which, in my judgment, make possible a clearer understanding of the economic theory of foreign exchange operations. In these and the following chapters, I have endeavored to analyze, more fully than is usually done, the interrelations of different persons, buyers and sellers, *et al.*, in the credit mechanism of exchange, — to show who are the ultimate creditors when bank checks and bank notes are used in trade and when bills of exchange (especially “long bills”) are used. Thus, after the explanation of the nature of banking, the reader is led, in Chapter III, *The Nature and Method of Foreign Exchange*, to an appreciation of the international nature of the credit relations growing out of trade. The flow of money from country to country having been explained briefly in Chapter I, the relation of this flow to the rate of exchange and to fluctuations in the rate of exchange is set forth at length in Chapter V. In the last chapter emphasis is placed on the fact, ordinarily passed without mention, that whatever may be the relation or non-relation of the currency of a country to the currencies of other countries, its trade with them cannot all be either an export or an import trade for any great while, without introducing a

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tendency to a reverse flow or to equilibrium. Since this last chapter was written, the outbreak of the European war, and the consequent risk and cost of shipping gold, have given practical significance to a discussion which would perhaps have appeared to be theoretical and academic.

Acknowledgment should be made here of various courtesies extended, and of the aid rendered by a number of friends who have done much toward removing errors of statement and expression and in suggesting critical and illustrative additions. To the *Quarterly Journal of Economics* I am under obligation for permission to include, in Chapter II, substantially without change, an article on *Commercial Banking and the Rate of Interest*, originally published in August, 1910. To Brown Brothers of New York I am indebted for information on a number of special points regarding foreign exchange. To one of my students, Mr. Lawrence M. Marks, Yale 1914, I am indebted for the calculation of seasonal sterling exchange rates, presented in a footnote of Chapter IV, Section 2. Mr. Franklin Escher, of New York City, formerly editor of *Investment*, has given me the benefit of a careful criticism of the manuscript, particularly regarding the matter of conformity of statement to business practice. To Professor F. R. Fairchild of Yale College I am indebted for a searching criticism from the standpoint both of theory and of form. Finally, I would acknowledge here the obligation I am under to my wife, who has given me valuable assistance in reading and criticizing the manuscript in its various stages of completion, and in correcting the proof.

HARRY GUNNISON BROWN.

MILFORD, CONNECTICUT.

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INTERNATIONAL TRADE AND EXCHANGE

CHAPTER I

LAWS OF MONEY

§ I

Quantitative Statement of the Relation between Money and Prices

PRIMITIVE trade is often a direct trading of one kind of goods for another, the process called barter. The exchange of knives, hatchets, guns, mirrors, etc., with the Indians, in return for land and furs, with which we have been made familiar in our school histories and in stories of adventure, was trade of this sort. But even the Indians had wampum, which they used as a medium of exchange, and the highly civilized countries have long since made use of money, whether of gold or silver or other material, in their commerce. A study of the laws of commerce involves, then, and may well involve as a preliminary step, a study of the laws of money. We are not likely to find that the basic principles of trade are so very different with money used than they would be if the world traded, supposing it conveniently could, goods of one kind directly for goods of another. The

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money-using method of trade is more efficient. The motives for trade and the nature of the advantages from it are the same whether money is used or not. But it is worth while analyzing the commercial processes, as they are actually carried on, even in many of their modern complications. To do so, may perhaps the more clearly expose fallacies regarding trade, not uncommonly held. We shall begin, then, with a study of money, considered as an important part of the mechanism of trade.

Money, as a medium of exchange, is a kind of wealth or property for which other goods are sold and with which, in turn, desired goods are bought. It may be distinguished from other wealth or property by its characteristic of general exchangeability. A person desiring, as all do desire who are engaged in any business or regular occupation or who have capital to invest, to dispose of some kinds of goods or services in exchange for others, does not need to seek out those who both want what he has to sell and will sell what he wants to buy and with whom he can make a satisfactory trade "in kind." Instead, he sells for money, for a universally desired medium, what he has to dispose of, to whoever desires it, and, with this money as purchasing power, seeks out those who have for sale what he himself wishes to buy. The use of money is an intermediate step in what is still the exchange of goods for goods. In order that money may perform its function of facilitating trade, both goods to be sold and goods to be bought must be valued in terms of money. Money becomes a measure of value as well as a medium of exchange. One kind of goods will have a higher value, measured in money, than another kind, if its cost of production is greater, or if, for

any other reason, only the higher value will equalize supply of and demand for this kind of goods. The same relation of values, between two sorts of goods, would exist if money were not used, but the use of money makes it measurable in a generally familiar standard.

An analysis of the prices or values of one sort of goods as compared with those of other sorts, leads us to a consideration of the special forces of demand and supply, such as utility and cost of production, acting upon such goods. In studying the laws of money we need to attend not so much to the conditions determining the value of one kind of goods in relation to some other kind or kinds, as to the conditions determining the average value of goods in relation to money, and *vice versa*. We have to consider, that is, the general level of prices, and conversely the purchasing power of money.

This relation between money and other goods has several times been given a mathematical form of statement.¹ Let S represent the total amount of money (number of dollars) spent in a given community during a given period of time, say a year. Let M represent the (average) number of dollars in that community during the same period. Then the average number of times a dollar is spent during the year will be S/M . This is the velocity of circulation of money and may be called V . $S = MS/M$, and therefore, by the method of substitution, $S = MV$. In words, the total dollars spent for goods is equal to the number of dollars in the community times the average velocity of circulation of those dollars.

But the total number of dollars spent for goods is also

¹ For instance, Newcomb, *Principles of Political Economy*, New York (Harper), 1885, p. 346; Edgeworth, "Report on Monetary Standard," Report of the British Association for the Advancement of Science, 1887, p. 293; Hadley, *Economics*, New York (Putnam), 1906, p. 197.

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equal to the sum of the quantities of all the kinds of goods bought, times their respective prices. Let the price per pound and the number of pounds of sugar bought be represented respectively by p and q , the price per bushel of wheat and the number of bushels bought by p' and q' , and so on. Then the total number of dollars spent for goods, *i.e.* S , is equal to $pq + p'q' + \text{etc.}$ Since two things equal to the same thing are equal to each other, and since

$$S = MV \text{ and also}$$

$$S = pq + p'q' + \text{etc.},$$

therefore

$$MV = pq + p'q' + \text{etc.}$$

This is the mathematical statement of the so-called quantity theory of money, omitting, however, any reference to credit currency.¹ It asserts simply that the quantity of money times its velocity of circulation, equals the prices of goods bought with money, times the quantities bought. The conclusion follows, therefore, that if the quantity of money, M , increases, while the velocity of circulation and the volume of trade remain the same, prices will rise in the same proportion. A decrease in the amount of M would, on the same assumption, be accompanied or followed by a fall in the money prices of goods. An increase in the q 's² or volume of trade would, other things equal, occasion a fall of prices; and a decrease in the q 's, a rise of prices.

¹ For consideration of credit, see Chs. II and III (of Part I).

² The q 's or quantities of goods should be held to include not only finished goods exchanged in trade and goods purchased for raw material, but also the additions made by labor to the utility of goods and paid for in wages and the additions made by the service of "waiting" and paid for by means of interest, dividends, etc.

§ 2

Causal Explanation of the Price of a Given Kind of Goods

A quantitative or mathematical statement of a principle is not, however, an adequate explanation of that principle. In this case, the explanation must be found in the working of the market, in competition with each other of buyers and of sellers. This means that there must be an analysis of the forces of supply and demand in relation to general or average prices, in addition to the usual study of those forces in relation to particular prices.

The price of any particular kind of goods, say the price of wheat per bushel, is commonly said to be fixed by the equation of supply and demand. But these terms are frequently misunderstood. For example, supply is sometimes thought of as the total stock. Demand is thought of as the amount wanted by purchasers, but without much reference to the exact conditions determining this amount. As a matter of fact, supply is not the total stock of a good, whatever relation it may have to this stock. Supply is different according as price is different. Hence any reference to supply should specify a price. The supply of any good at a given price is the amount which sellers are ready to dispose of at that price.¹ Thus, the supply of wheat at a price of \$1.10 per bushel may be, in a given market, 1,000,000 bushels. That is, at a price of \$1.10 per bushel, there are so many persons ready to sell wheat and ready to sell such quantities, that 1,000,000 bushels may be had.

¹ See J. S. Mill, *Principles of Political Economy*, Book III, Ch. II, § 4. One of the best recent presentations of the theory of supply and demand is to be found in Fisher, *Elementary Principles of Economics*, New York (Macmillan), 1912, Ch. XV.

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In general, the higher the price, the larger, other things equal, will be the supply; and, similarly, the lower the price, the smaller will be the supply. If the price of any good is lower relatively to other desired goods, producers and sellers will be less inclined to bring the good to market for disposal, and may even turn their attention to other lines. If the price is higher, they will be more inclined to sell large quantities, and some may be tempted to forsake other lines to produce the good in question.

In the same way, reference to demand should specify a price. Analogously, the demand for any good at a given price is the amount that purchasers stand ready to take at that price. If at \$1.10 per bushel the demand for wheat is for 1,000,000 bushels, then the number of persons wishing to buy wheat is such, and the amounts they individually stand ready to buy are such, as to make an aggregate of 1,000,000 bushels. Other things equal, demand rises as price falls, and falls as price rises. The lower the price of any good in relation to prices of other goods, the more ready are purchasers to buy it; and the higher the price, the less ready. The price of any good, whether of cotton, labor services, bills of exchange or anything else marketable, is fixed where supply and demand are equal.

It is not, however, an explanation of price merely to state that it is fixed where supply and demand are equal. It is necessary further to inquire *why* price is fixed at that point. If supply of and demand for wheat in a given market are equalized at \$1.10 per bushel, why may not the price nevertheless be \$1? If we assume \$1 to be the price, we see that such a price represents a position of unstable equilibrium. At this price, the demand would be in excess of the supply. The persons anxious to buy

wheat are ready to buy, at this price, more than can be had, and since even at \$1.10 the amounts they will buy are equal to the amounts they can get, it appears that there are many who would gladly pay more than \$1 per bushel rather than go without wheat entirely. Here, then, are persons, many of whom would pay more rather than not get the wheat, the aggregate of whose desired purchases at \$1 per bushel must exceed the total supply offered. If \$1 is the price, some who would gladly pay that and more cannot get the wheat they desire.¹ Each intending purchaser will fear that he will be one of those who fail to get what they wish. Since all cannot be satisfied and since he himself may not be, he is likely to offer more than \$1 in the hope that sellers will be persuaded to sell to him, at least. But he is not likely to offer more than \$1.10. According to our hypothesis, a price of \$1.10 will bring forth a supply fully equal to the demand. Even if other buyers are foolish enough to offer a higher price and are sold to in preference, yet since the demand of these others would not absorb the entire supply, a purchaser who offered \$1.10 would secure the wheat desired.

As the price is kept from going below that height which equalizes supply and demand, by the competition of buyers, so, by the competition of sellers, it is kept from going above that height. If \$1.10 a bushel is the equalizing price, the competition of sellers will prevent the price from being higher, say \$1.15. For at \$1.15 there would presumably be a smaller demand and a greater supply. That is, at \$1.15 there would be sellers anxious to dispose of, in the aggregate, more wheat than buyers

¹ This explanation of the nature of competition is well set forth in Hadley, *Economics*, pp. 75-77.

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would take. Some of these prospective sellers must be doomed to disappointment, and those most anxious to sell would therefore bid against each other in lowering the price to the point where supply and demand were equal. This they would do because in no other way could they be sure of selling their wheat. But they need not go below the equalizing price, because when that price is reached there are enough more buyers or enough fewer sellers, or both, to insure sales by those still in the market and desiring to sell. Even if some should offer, unwisely, to sell at a lower price, yet since these could not, by our hypothesis, satisfy the demand, all who charged the equalizing price would still find purchasers. The market price of any kind of goods, therefore, tends to be that price which equalizes supply and demand, and is prevented by the forces of competition from going above or below it.

§ 3

Causal Explanation of the General Level of Prices

Let us now apply the principles of supply and demand to the general level of prices. We shall see that much the same kinds of competitive forces which fix any one price (as above explained) in relation to other prices, fix the general level of prices of goods in terms of money. We shall consider, first, the supply of goods, including the services of labor and of "waiting" (*i.e.* investing, or putting capital into use, the service for which interest is paid) offered for money, and the demand for goods by those having money to spend. Afterwards we can reverse our method and consider the supply of and the demand for money in exchange for other goods.

Where there is only fiat (inconvertible paper) money,

the supply of goods in general, offered for money, at any level of average prices of those goods, would be just the same as at any other level of prices. This is very nearly true no matter what the money system.¹ If wheat prices are higher than corn prices, or *vice versa*, productive effort may be diverted from one line into another. But we are now not discussing changes in individual or relative prices. We are discussing only changes in the general level of prices, the average of prices. If the general level of prices should double, there is no reason to believe that the amount of goods produced for sale would on that account greatly increase. Supposing a community to be in reasonable prosperity and business activity at the lower prices, an increase of these prices would not make possible a very greatly increased production. It would not enable men to work longer hours nor would it make machinery more efficient. Neither would it stimulate the sales of goods by making such sales more profitable, since a general rise of prices simply means that money has a less value. If everything should sell for twice as much money as before, the sellers would gain nothing, for the things they desired to buy would also cost twice as much. Looking at the matter from any reasonable point of view, it must be admitted that the supply of goods in general, at a higher level of prices, would be no greater (or but slightly greater)² than at a lower level. Likewise, at a lower level of prices, the supply of goods would be no less than at a higher one. A lower level of prices would not mean less activity or a smaller sale of goods. It would pay as well to sell goods at a low level of prices as at a high level, since at the lower

¹ See remainder of this section for explanation of why it is not always entirely true.

² See next paragraph.

level the money received would have correspondingly greater purchasing power.

The lower level of prices would only decrease the supply of other goods and the higher level increase it, in one contingency, and then only to a very limited degree. When the currency system is based on a precious metal, *e.g.* gold, a lower level of prices means a higher value of gold as money. It might therefore divert some labor from the production of other goods to the production of gold for coinage. A higher level of prices might tend, in the same degree, to divert labor from gold production towards the production of other goods. To this extent only, a higher level of prices would tend to increase the supply of goods in general other than money, and a lower level of prices to decrease it.

On the other hand, a higher level of prices of goods would tend to decrease the demand for goods by persons having money to spend. For with higher prices, and no greater amount of money to spend, buyers of goods would be unable to purchase as much as at lower prices. Lower prices of goods would mean that the money of purchasers would go farther.

Let us now suppose a doubling of the amount of money. Prices would tend to increase in nearly the same proportion. Suppose prices did not rise. Then purchasers of goods would buy all they were in the habit of buying and still have as much money left to spend as they formerly spent all together. This they would endeavor to spend at once. For in modern countries money is not hoarded away, but only enough is kept on hand for emergency requirements, and the rest is spent. Those who save are spending just as effectually as any others. The difference is in what they buy. Those who save

buy factories, warehouses, railroads, farms, etc. Even though their savings are put into a savings bank, they are none the less spent for investment goods. It follows that a sudden doubling of the amount of money, if prices did not increase, would mean a demand for goods far exceeding the supply. The amount of land is practically constant. Doubling the amount of money would not enable people to work longer hours and so increase the products of labor. In a busy community the supply of goods to be sold simply *could not* be doubled except with an increase of population or invention. The increased money would therefore mean that at the old prices the demand for goods in general would exceed the supply. Purchasers would bid against each other. Prices would rise. Equilibrium would only be reached, supply and demand be equal, at a general level of prices nearly (or, if fiat money, quite) twice that which had preceded.

If prices rose equally, this would mean a doubling in the money wages of labor for the same results produced and, similarly, a doubling in the money interest, dividends or profits received for "waiting." Aside from disturbing effects during the period of transition, the *rate* of interest would be the same with the high prices as with the low. The money value of the sum waited for would be doubled and the money value of the interest would be doubled. The ratio between them would be the same as before. In other words, since prices have doubled, borrowers, for example, would require twice as many dollars as before and would also, of course, pay twice as many dollars in interest.

In the light of the principles above set forth, regarding supply and demand, we can explain why the excessive

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amounts of inconvertible paper money sometimes issued by governments, issued particularly in time of war, have resulted in very exceptional rises in the price level. This increased amount of money means, at any level of prices, a greater demand for goods. Therefore, that the demand for goods may not exceed the supply, the level of prices must rise. There is another factor of importance at such times, viz. public confidence in the money issued. If there is a general belief that the money will become absolutely valueless or greatly decrease in value, then many who have goods to sell will refuse to sell them for this money, but will demand gold or silver or other goods in exchange. This decrease in the supply of goods, offered for money, will mean that only a higher level of prices than otherwise would result can equalize supply and demand. Thus is to be explained the high prices (and, reciprocally, the great depreciation of money) in such periods as the American Revolution, the Civil War, etc.

§ 4

Causal Explanation of the Value or Purchasing Power of Money, the Reciprocal of the Level of Prices of Goods

Let us look at the same problem, the general level of prices, from the other side, that of the purchasing power of money or the value of money in terms of goods. We shall consider now the supply of money offered by purchasers of goods (corresponding to demand for goods) and the demand for money coming from sellers of goods (corresponding to the supply of these goods).

Before defining supply of and demand for money, we must select a phrase to express the price of money. The value or price of money is usually expressed, not in terms

of any one thing, but in terms of all, or most other, purchasable goods. Its value or its price is measured in the amount of other goods it can buy. The value or price of money we shall therefore call the purchasing power of money.

We may now define money supply and demand consistently with wheat or coal supply and demand. First, as to supply, we may say that *the supply of money at any given purchasing power is the amount of money which would be supplied — i.e. would be offered in purchase of goods — at that purchasing power.* Just as, at a higher price of wheat, the supply in the long run would tend to be greater than at a lower price, so, at a higher purchasing power of money, the supply of money would tend to be greater than at a lower purchasing power. The supply would be greater at a higher purchasing power, because, at a higher purchasing power, it would be worth while to turn bullion into coins or even to mine more gold for that purpose. The supply of fiat money (irredeemable paper) would not be greater, but would be just the same at a higher purchasing power as at a lower. The normal supply of money at any purchasing power and during any period of time, the amount that would be offered by sellers of money (*i.e.* buyers of goods) involves, as Walker has pointed out,¹ the quantity of money and its rapidity or velocity of circulation. This velocity of circulation may be less than unity; that is, most of the money may circulate less than once if we are dealing with an instant or a short period of time. But if we are dealing with a long period of time, say a year, and with the conditions determining normal purchasing power, the velocity will

¹ *Political Economy*, Advanced Course, third edition, New York (Holt) 1887, p. 129.

perhaps be 20 or more.¹ In any case, the supply, the amount that would be offered at any given purchasing power, is the total amount which, at that purchasing power, would be on hand, multiplied by its velocity; and it may be represented, therefore, as MV .

Turning to the subject of demand, we may properly define the demand for money, at any purchasing power, as the amount of money that would be taken by sellers of goods, at that purchasing power. The demand for money comes from the sellers of other goods who wish to take money in exchange for those goods. They may be said to buy money with the goods they sell. When the money is altogether fiat (inconvertible paper) money, the amount of goods offered for money will not be affected by the purchasing power of money. With an exception shortly to be noted, this is also true in the case of such a commodity money as gold or silver. That the purchasing power is at any time greater or less, provided only it is not fluctuating, affects neither for good nor ill the sellers of goods. If the purchasing power of money is greater, they will still sell their goods as readily for money since the smaller amount of money so received will go as far as would a larger amount having a smaller purchasing power per unit (*e.g.* per dollar). But their demand for money, in the proper use of the term "demand," will not be the same. If the purchasing power of money is doubled, demand for money will be exactly halved. If the purchasing power of money is halved, demand for money will be doubled. Sellers of goods will take all the money which the goods they desire to sell will bring. If, therefore, the purchasing power of money is halved,

¹ See Fisher, *The Purchasing Power of Money*, New York (Macmillan), 1911, p. 290.

i.e. if it takes twice the former amount of money to buy the same goods, then the demand for money, the amount sellers of goods (buyers of money) will take, at this purchasing power, will be exactly doubled.¹

The exception to be noted has already been referred to in the discussion of the general level of prices.² It occurs when money is based on some standard commodity, as gold, having an appreciable cost of production. To double the purchasing power of money would, in fact, probably reduce the demand for it to something very slightly less than half what it had been, for a small (relatively a *very* small) amount of labor would probably be diverted from the production of other goods to the mining of gold. Therefore, unless the value of money more than doubled (*i.e.* unless money prices of goods became less than half), the money which would be taken by sellers of the somewhat smaller stock of goods would be less than half as great. Similarly, a fall of half in the value of money would very probably divert some labor from gold mining into other lines, and so might slightly more than double the demand for money. For every one would be ready to sell his goods at twice the former price, and there would be more goods to sell. Normal demand, therefore, for money, *i.e.* long-run demand, cannot be distinguished by any exact proportion from demand for other goods. But when the money does not involve an appreciable cost of production, but is inconvertible paper, or, for any money, where an extremely short period is involved, the demand for money varies inversely with its purchasing power.

¹ Were it not for the exception next to be mentioned, the demand curve for money would be always a rectangular hyperbola.

² § 3 of this chapter (I of Part I).

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The demand for money by sellers of goods may be said to be the money value at which they would sell those goods; therefore, the prices times the quantities; therefore, $pq + p'q' + \text{etc.}$ The purchasing power of money is fixed where supply is equal to demand, where $MV = pq + p'q' + \text{etc.}$ The equation of exchange may be regarded as simply a mathematical mode of stating that the p 's, the purchasing power of money, must be such that supply of money equals demand, *i.e.* that $MV = pq + p'q' + \text{etc.}$

§ 5

The Theory of Bimetallism

The laws of supply and demand serve to explain the effects of the various monetary systems which have been tried in different countries. Important among those monetary systems is bimetallism. Bimetallism involves the concurrent circulation of two metals at a fixed legal ratio. Both metals are coined by government, for those bringing the metals to the mints, in any desired quantity, and coined without charge or for the mere cost to government of coining. Both metals, when so coined, are legal tender for the payment of debts and taxes, at the value ratio fixed. Thus, bimetallism at 16 to 1 meant, for the United States, that the amount of silver in the silver dollar should be approximately 16 times the amount of gold in a gold dollar, that gold and silver should both be coined freely and without limit, and that a debtor should be able to liquidate the same debt with 100 silver dollars as with 100 gold dollars.

Bimetallism may succeed if the legal ratio is not too far from the market ratio of values existing when the system

is started. If the amount of silver in the legal silver dollar is worth 98 per cent as much as the gold in the gold dollar, or 98 cents, then the system may succeed.¹ It will succeed because the possibility of using 98 cents' worth of silver, if coined, to pay a \$1 debt (or tax) previously payable in gold,² will stimulate the coinage of silver. This extra demand for silver will increase its value. Otherwise expressing the matter, we may say that the withdrawal of silver from the arts, tending to cause a decreased supply of silver for arts uses, will increase its value. The greater quantity of money will tend to make somewhat higher prices and a somewhat lower value of a dollar (whether gold or silver). This may discourage the coinage of gold or even cause the melting of some gold coin into bullion. We may say that the less demand for gold has made its value fall, or that the melting of gold coin and the consequent greater supply of gold in the arts has made its value fall. The sequence is, then, flow of silver from bullion into coin, slightly depressed value of coin, flow of gold from coin into bullion. Silver has risen in value. Gold has fallen. Probably the silver dollar is, therefore, now worth the same as the gold dollar instead of 98 per cent as much. If the bullion content of the gold dollar came to be of the less value, debtors would prefer to coin gold and the flow would be in the opposite direction, but likewise towards the establishment of equilibrium.

Suppose, however, that the amount of silver in a silver dollar is worth only 40 per cent of the gold dollar (which was more nearly the case with the silver dollar when its

¹ Cf. Fisher, *Elementary Principles of Economics*, pp. 230, 231.

² Or money, on a parity with the gold, other than silver money coined for account of the debtor.

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free coinage was advocated in 1896). Then the danger would be that, long before the increased demand for silver as money and its decreased supply in the arts, coupled with the decreased demand for gold as money and its increased supply in the arts, had brought about the desired equilibrium of value, the gold would be entirely driven out and the money used would simply be silver instead of gold. The whole question would be whether the scarcity of silver in the arts and the plentifulness of gold in the arts would be sufficiently marked to make the relative values the same as in the legal ratio, before silver enough had been taken from the arts uses to fill all the money circulation; and then, whether sufficient additional supplies of silver could be got from the mines to drive out the gold without forcing the margin of production unprofitably low, *i.e.* without mining, at a loss, from poor mines.

For one country alone, the prospects of success in establishing bimetallism would be much less bright than for a group of important commercial countries. For if one country tried it alone, endeavoring by free coinage to make 40 cents' worth of silver equal to \$1 worth of gold, it would have to absorb into its currency, not only silver from within its own borders, but silver flowing to it from all the world, and its own demand in relation to such a great supply might increase the value of silver relatively little. And, as the silver drove out the gold, the latter would not fall rapidly in value through congesting the arts, but would be distributed to the money supplies, as well as the arts, of all other countries.

§ 6

The Value of Subsidiary Money

At the present time, in the United States, France, and elsewhere, there exists the so-called limping standard, *i.e.* there are silver coins the bullion value of which is not equal to their face value, but the amount of which is strictly limited. In the United States, there are a certain number of silver dollars and silver certificates. The silver in the silver dollars is worth perhaps about half of their face value. But they cannot drive out gold because not enough are coined to produce such a result. Any money, even paper, if put forth in very limited quantities and made legal tender for the payment of debts and taxes, may circulate at par with gold. The possibility of using it for debts and taxes creates a demand for it, and others will take it because they in turn can pass it to those having such uses for it. A general public confidence in and willingness to take it at the legal value, is developed. On the other hand, the limitation of its quantity means a limited supply. The demand for it equals this supply, at a value equal to par. Where a limited amount of money is issued by coining metal of less value than the money, or by printing paper, this is done by government exclusively on its own account. Otherwise there would be special favor shown, at the general expense, to those persons for whom the coining was done.

Making paper or other money redeemable in gold is merely a way of making the forces of demand and supply automatic in keeping up the value of such credit money.¹ If for any reason, *e.g.* overissue or lack of confidence, the value of such money sinks below the value of the gold

¹ Cf. Fisher, *The Purchasing Power of Money*, pp. 262-263.

in which it is redeemable, the holders of the paper money at once present it in large quantities for redemption. This immediately decreases the supply of it, and thus automatically prevents its entire driving out of gold. Prompt redemption at the same time gives confidence and so maintains a demand for it. But the limitation of supply, automatic or otherwise, is important, for no amount of confidence can prevent a fall in the value of money which increases indefinitely in quantity. An increase in gold itself tends to raise prices and lower the value of gold. An increase of paper money tends to increase prices in paper. Redeemability prevents prices in paper from ever rising higher than prices in terms of gold.

In the case of paper money, the receiver is really a creditor. He gets a credit claim, not real wealth. The paper money evidences a right based on its general acceptability, or on its redeemability by government, to an amount of wealth or income services equal to the value of the money. The issue of paper money is a species of borrowing by government; but no interest is paid, because the holder, unlike the holder of government bonds, has, if the money is generally acceptable, a demand claim. He does not need, therefore, to wait for his desired goods any longer than he wishes to, but can spend the money and get goods at any time from another, who can do likewise with a third, etc. He does not need, therefore, to be in the position of a creditor longer than his own convenience dictates. The general acceptability of such money, if it is generally acceptable, makes the holder willing to forego any other interest.¹

The money of the United States includes gold and silver

¹ See Ch. II (of Part I), §§ 3, 4.

coins, gold certificates, silver certificates, United States notes (greenbacks), treasury notes, and subsidiary coins (quarters, dimes, etc.). There are also bank notes, but these may be better considered, along with other bank credit, in the next chapter. All the paper money except silver certificates is redeemable by law in gold. Silver certificates are redeemable in silver. No law expressly makes the silver dollars redeemable in gold; but it is the duty of the Secretary of the Treasury to maintain the parity of the silver coinage with gold, and in practice any kind of our money is exchangeable at the United States Treasury for any other kind. Even without this practice, the limitation on the number of silver dollars and their full legal tender quality would doubtless maintain them at par value, although the value of the contained bullion is much less.

§ 7

The Value of Money as Related to the Value of a Standard Money Metal

Most countries have now the gold standard. All money is redeemable in or in some way related to gold, and the value of money tends to equal the value of the mint equivalent in gold. So long as gold is coined freely, and in any quantity desired, into money, the value of gold as money and as bullion must be the same. For if gold coin came to have more value than gold bullion to be used in the arts, then persons having gold bullion would hasten to get it coined. The consequent increase of money would raise the prices of goods and lower the value of money. The decrease of gold for use in the arts would increase its value in that use. Equal value in the two uses must soon be reached. If, on the other hand,

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gold as money should have, at any time, a less value than the same amount of gold as bullion, then all newly mined gold would be used in the arts and little or none coined, until gold in the arts was so plentiful and money so scarce as to make the values even again. Gold money, if full weight, might even be melted into bullion, if it were worth enough more in the latter use to pay for the trouble.

Eventually, then, since, when the gold standard is in force, the value of money and the value of gold bullion tend to be the same, both depend upon the amount of gold mined relative to the use for it. The cost of production of gold, and, therefore, the number and richness of gold mines, is not without an influence, in the last analysis, on the level of prices, and on its reciprocal, the purchasing power of money.¹

§ 8

The Level of Prices and the Value of Money in One Country or Locality as Related to the Level of Prices and the Value of Money in Another

Before concluding this chapter, something should be said regarding the relation of the quantity of money and prices in one locality or country to the quantity of money and prices in others.² The subsidiary and credit money of one country is commonly not received in other countries. Gold or silver (at present, with the gold standard general, chiefly gold) is passed from one country to another in payment for goods or services or to redeem obligations.

¹ These facts are mechanically expressed in Fisher, *The Purchasing Power of Money*, pp. 96-111.

² For a fuller statement see Fisher, *The Purchasing Power of Money*, pp. 90-96.

Between different countries, the gold passes only by weight, but since gold coin and bullion are related in all gold standard countries, the effect of the flow of gold from one country to another is to decrease, relatively, the quantity of money in the one and to increase it, relatively, in the other. Between parts of the same nation, all legal tender money, whether gold, silver, or paper, passes freely.

What are the laws of this flow? Obviously, money, like all things else, flows to those places where it has the greatest value, where it can buy the most of other things. That is, money flows from those places or countries where prices of goods are high, to those places or countries where prices are low. Goods are bought where they can be bought the cheapest. Money goes to pay for the goods. Hence, money flows to those places where there are low prices. But low prices means high purchasing power or value of money. Therefore money flows to those places where its value is high. When, however, one country has an inconvertible paper money unrelated to the money of another, no such flow can take place. When paper money is first issued in one country it tends, by raising prices, to cause purchases abroad, where prices have not thus been raised. As the paper money is not legal tender elsewhere, gold must be sent to pay for the goods thus bought. The continuing issue of paper money may drive all the gold out of the currency of the country issuing the paper. Until it does so, the effect on prices applies to other countries as well; the effect is distributed over all. Though the paper circulates only in the issuing country, it displaces gold and pushes the gold into other countries. But, when enough paper money has been issued completely to drive out

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gold, no such further effect on other countries can be produced. Trade will still take place.¹ Commodities of one sort are bought and commodities of another sort are sold. Gold itself may be traded back and forth. But the currency of the one country is absolutely unrelated to the currencies of others.

§ 9

Summary

In this chapter we have been concerned chiefly with the laws of money, an important part of the mechanism of civilized commerce. We saw, first, that the general level of prices of goods varies, other things equal, with the quantity of money. This fact was mathematically expressed in the so-called "equation of exchange,"

$$MV = pq + p'q' + \text{etc.}$$

Analysis of the causal relations between quantity of money and prices led us to demand and supply and the ordinary forces of competition as an explanation. It was seen that increased money involves higher prices of goods to equalize supply of and demand for those goods, and, conversely, a lower purchasing power or value of money, to equalize supply of and demand for that money. Supply of money might be determined by government in the case of inconvertible paper but is generally a matter of the production of the precious metals, especially gold. The possibility of successful bimetallism was shown to depend upon the ratio chosen and the relative amounts of money of each metal available under that ratio. Supply and demand acting through the money and bullion markets tend to bring market ratio to equivalence with

¹ See Ch. VI (of Part I), §§ 7, 8.

legal ratio, but may not have the effect of doing this before one metal is driven out of circulation. The limping standard and paper money were shown to depend upon limited quantity of the paper money or the overvalued (in comparison to weight) silver (or other metallic) money, and upon their legal tender qualities. The supply is limited; the demand kept up. Redeemability automatically tends to prevent oversupply of credit money or that loss of confidence which decreases demand for the money. With free coinage of gold, the value of gold as coin and as bullion tends to be the same. Finally, we saw that the flow of money from place to place or country to country is a flow from where it is cheap to where it is dear, from where it buys little to where it buys much, from where prices of goods are high to where they are low.

CHAPTER II

THE NATURE OF BANK CREDIT

§ 1

How and When Credit Takes the Place of Money

CREDIT is given whenever goods are sold for a promise to pay, for a tacit obligation to pay later, or for some form of claim upon a third party such as a bank. The characteristic of all credit is the fact that the person disposing of goods to another does not immediately receive payment in the form in which he is entitled, ultimately, to receive it; but receives, instead, a right to future payment, a right commonly evidenced by some kind of commercial paper. Most frequently this evidence is the check on a bank, showing the title of the receiver or payee to money from the bank on demand; or the bill of exchange, showing a title of the payee to money from the drawee, sometimes on demand and sometimes on a definitely agreed date.

The term "currency" we shall use generically to include money, which is generally acceptable in exchange for other goods, and those credit rights, less generally acceptable, which are, nevertheless, largely used as media of exchange and therefore serve as money substitutes. Such credit instruments as checks, bills of exchange, and promissory notes, act as substitutes for money only if the rights to the sums which they have reference to are transferred to third, fourth and other parties. Only in such

cases, therefore, can these credit instruments or the rights which they certify be considered as currency. If a promissory note is given by one person to another and kept by the second until maturity, the use of the note merely means that money is paid from the one person to the other at a later date instead of an earlier. There is no saving of the use of money in the sense that credit takes its place. But if A owes B \$100 and B owes C the same sum, and if A's promissory note to B is used by the latter to pay C, then the use of money is to some extent avoided. A eventually redeems his note by paying C the money. Money is passed once instead of twice.

The ordinary check, sometimes called the "customer's check," is similarly used. A may give to B a check for \$100. B, though he does not perhaps use the same check to pay C, uses the same demand right or claim on the bank. He sends in the first check and has it credited to his account. Then he gives his own check to C. C may collect from the bank or may in turn pay a fourth party by check, and so on. In practice, the sums owed by the different parties will probably not exactly balance. B may pay C by giving the latter a check evidencing the right to draw the sum received by B from A plus other sums received by B from D, E, F, etc. But however this may be, the principle is the same. Thus, the bank deposit, or right to draw from a bank, takes the place of money in effecting exchanges of goods or services. The use of bills of exchange also facilitates the balancing off of obligations against each other, without the payment of coin.¹

¹ See Ch. III (of Part I), § 1.

§ 2

How Commercial Banking is Carried On

Credit instruments, or credit rights — for the paper is in each case but evidence of the underlying obligation — act as substitutes for money primarily through the intermediation of commercial banking,¹ and foreign exchange banking. Commercial banks constitute an important part of the mechanism of trade. Their work facilitates internal trade and, in connection with the work of foreign exchange banks and brokers, facilitates external trade as well. It is estimated that nine tenths of the total business in the United States is carried on through the use of bank credit.²

Bank deposits (rights to draw from a bank or banks), which circulate by means of checks, may come into being in any one of several ways. One may become a depositor by directly depositing money (or the right to draw money, received by check from some one else, but this merely registers a transfer of a deposit and does not create one). One may become a depositor by borrowing from the bank in which the deposit is to be. If A goes to his bank and leaves there \$50,000 cash, he thereupon is said to have deposited such an amount in the bank and can draw on this sum at will by issuing checks against it in favor of any persons to whom he wishes to make payments. But A may also go to the same bank, give his endorsed note or other satisfactory security, and borrow \$50,000. This money he leaves on deposit. The bank is then said to lend its credit. What A has bor-

¹ Savings banks and investment banks perform, of course, important functions, but do not have a part in providing a substitute for money.

² See Fisher, *The Purchasing Power of Money*, New York (Macmillan), 1911, pp. 317, 318.

rowed is not money but the right to draw money by check, at will. The bank is under as much obligation to redeem his checks on demand as if he had directly put money into the bank. On the other hand, A is under obligation to pay the bank, when his note matures, the amount borrowed plus interest.

It should be readily apparent that a bank can, in ordinary times, redeem all checks presented for redemption, without keeping for that purpose a cash reserve which at all nearly equals its liabilities. The total value of deposits which a bank is under obligation to pay out on demand, may be \$500,000. Yet it is certain that all the depositors will not call for their money at the same time. Instead of drawing it out, most of them send checks back and forth to and from others who do likewise. A cash reserve of \$100,000 may be ample. Putting the matter in the opposite way, we may assert that if there is \$100,000 in cash in such a bank, the bank can lend its credit, *i.e.* more deposits or rights to draw, to the extent of (say) \$400,000.

We have said that different depositors in a bank liquidate their obligations to each other by giving checks. There is, then, simply a change on the bank's books. Any amount of obligations can be thus balanced. Different persons are made successively creditors of the bank for larger or smaller sums. The situation is complicated, but the principle is not changed, when depositors of different banks have business dealings with each other. In this case, which is a decidedly usual one, the banks become successively each other's debtors and creditors and have to settle through a clearing house. Bank A may have accepted and paid cash for, or credited to depositors, many checks on Bank B. Bank B therefore

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owes Bank A. Similarly, Bank C may owe Bank B, etc. All of these complicated obligations are balanced by a clearing house, so that each bank pays what it owes net or receives what is owed to it net, and a great deal of flow of money is avoided. In other words, the principle of cancellation is applied whenever possible between banks, just as it is in any one bank to the depositors in it.

§ 3

Analysis of Relations Involved in Commercial Banking

But our analysis of the nature of commercial banking is not complete until we go back of the banks and examine the relations to each other, through the banks, of those who deal with the banks and with each other.¹

When a man borrows from a bank (giving proper security and receiving credit on the bank's books), he is getting command over present wealth in return for a promise to repay wealth in the future. Those who provide him with this present wealth must *wait* before being repaid. Lending always involves giving up something now and getting something in the future, *i.e.* lending always involves waiting.² In order, then, that any one may borrow from a bank, some person or persons must be the lenders, must be ready to give up goods in the present for goods in the future, must *provide waiting*. The bank itself is, for the most part, only an intermediary. It brings together a supply of waiting, but it does not, to any considerable extent, furnish that supply. It places

¹ The argument of this and the following section is substantially the same as that presented by the writer in the *Quarterly Journal of Economics*, August, 1910, in an article entitled "Commercial Banking and the Rate of Interest."

² Though there may also be waiting where there is no lending but only investing.

loanable funds at the disposal of borrowers, but it is not itself the ultimate lender.

The persons who provide the waiting, *i.e.* who are the real lenders, may be divided into two classes: (a) those who, in return for goods, receive checks from borrowers of the banks (or personal notes or "acceptances," which the banks discount¹). (b) Those who have deposited money in the banks.

Both of these classes have claims on the lending banks, claims which, taken all together, cannot be redeemed by the banks except as those who have borrowed, those who are indebted to the banks, make good the claims of the banks on them. When a man has accepted a check from one who has borrowed of a bank, and has given goods in exchange for this check, he has actually given present wealth in exchange for a mere right to draw on the bank. He may, therefore, so long as he does not exercise this right, be regarded as a lender. If he passes a check for a like amount to another, in return for goods, the other becomes the lender, since this other now has the right to draw, and has given up for it present wealth. If, instead of passing a check to another, the original payee avails himself of this right to draw, taking money from the bank, then some one who has deposited cash in the bank vaults may be looked upon as the lender, since his money has been taken from the bank and the borrower is expected to make good the subtraction. Thus, either the original receiver of a deposit right from a borrower, or some one to whom he passes this right, or some depositor whose cash is withdrawn to redeem the check, may be regarded as a lender. One person after another holds, for a time, the right to draw money from

¹ See § 4 of this chapter (II of Part I).

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a bank, and delays using that right. In the aggregate, there is a very great deal of such delaying or waiting on the part of persons who are entitled to money whenever they desire it, but who do not find it convenient to claim it at once. Each of them knows that he can collect from a bank, at will, or can pass his claim to another, at will, for any desired goods. Yet commonly there is an interval during which such a person remains a creditor or lender, preferring the convenience of an available bank account to the immediate possession of other goods. Commercial banking has as a function to combine and coördinate such sporadic potential lending or sporadic waiting, so as to put at the disposal of borrowers a sum total of actual lending which is fairly constant in amount. If A leaves his claim on a bank untouched for one week, B for two weeks, and C for a week and a half, because convenience so dictates, why may not D, in the meanwhile, be using the capital which they do not yet wish to use? By bringing all these parties together, commercial banking enables D to get the use of capital without at all inconveniencing A, B, or C. Each of these can get his capital to use whenever it is convenient, but, in practice, all of them will not want it at the same time.

It may be objected that the foregoing treatment is too concrete to be true. In any individual case of borrowing, it is perhaps not legitimate to pair off each borrower with one or more ultimate lenders, assuming that a particular holder of a deposit (or two or three such) is the real lender to some special borrower. Banks bring together borrowers and lenders in large numbers, and there is no logical way to assign two or more into pairs or small groups. But it cannot be denied that if the total of loans is taken, the ultimate lenders are the total number of acceptors of

checks and depositors of money, both of which classes are depositors in the broad sense, because both are possessors of the right to draw. Since the receivers of checks are as much holders of rights to draw, that is, of deposits, as are the cash depositors, we may say that all the borrowers are in debt to all the holders of deposits and that the latter are lenders to the former. When a borrower of a deposit has not transferred it, he may be regarded as indebted to himself, since his right to draw may be regarded as in the main backed up by his own promise to pay. The interrelations of banks through a clearing house merely extend these relations to persons depositing in, borrowing from, and receiving checks on, other banks. The principles are the same as in the case of a single bank.

The upshot of the matter is that modern commercial banking makes it possible for men to do business with each other by becoming, successively and alternately, through the banks as intermediaries, each other's debtors and creditors; while yet no one of them needs to remain a creditor or lender longer than suits his convenience.

§ 4

Why Commercial Banking Commends Itself to Business Men, both as Lenders and Borrowers, so that Commercial Bank Credit becomes a Substitute for Money

Thus bank credit acts as a substitute for money. Its use is simply a process by which persons become, so to speak, successively each other's creditors, in such way as ultimately to cancel obligations with only a little use of cash. But we have yet to see, fully, just why bank credit is able to displace money, to a large extent, as a medium of exchange. It does this by conferring an

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advantage upon both borrowers and ultimate lenders. Ultimate lenders, as such, are benefited by the convenience of a banking service for which they do not have to pay. Borrowers are benefited in that they can borrow on better terms from banks than would otherwise be possible.

We have already seen that commercial banking combines and coördinates waiting which would in any case be done. Such waiting includes, for example, the waiting done by a man who has money in his pocket which he intends to spend. It may be a long time before he does spend it, but he knows that at any time he may spend it, and when it is convenient he will do so. Practically everybody finds it desirable to keep part of his assets in ready cash, to use as occasion may require. The convenience of having the ready cash compensates for the loss of the interest that might be received from various investments, and so may perhaps be regarded as, itself, a kind of interest. The same holds true of bank deposits subject to check demand. Business firms must keep part of their assets in such form as to be able to meet current expenses and occasional emergencies. They usually keep considerable amounts to their credit in some bank. Even in the absence of banks, money would have to be kept on hand, and there would be a great deal of sporadic waiting remunerated only by the convenience of having cash on hand when wanted.

The lender, therefore, that is, for example, the receiver of a check on a bank, who becomes a depositor and supplies waiting, is not injured but rather is benefited by commercial banking. He can draw upon his account at will, and this account is both safer and more convenient (especially for making large payments and payments of

odd sums) than the equivalent of ready cash would be. There are, consequently, many persons who would be and are lenders, without any further payment of interest than the deposit service of banks. The lending involves, in each case, only such waiting as is convenient and as would be done anyway. And it is more satisfactory to have the bank deposit, thus making this waiting available as lending, than to keep all quick assets in cash. From the side of the ultimate lenders, there is no difficulty in seeing how bank credit may be substituted for money, to a large extent, with advantageous results. It should be noted that the ultimate lenders are, by making their waiting available to borrowers, really adding to the wealth-producing efficiency of the community. Were it not for this bank credit, *i.e.* this combination of sporadic waiting, borrowers could only be similarly provided for by the use of money. But a quantity of money corresponding to such possible bank credit, supposing the money to be of standard money metal, *e.g.* gold, would be a tremendous capital investment and would involve, therefore, great expense. An equivalent additional investment in other capital, if made possible by a partial substitution of safe bank credit for specie money, is more profitable to the community. The same total amount of capital is thus made to produce larger results.

Let us now consider the interests of the borrowers. They also will be ready to encourage the system, because it enables them to secure loans at relatively favorable rates. The banking system combines and coördinates, as we have seen, a great deal of waiting which would be done in any case. This it puts at the disposal of short-term borrowers, so adding to the supply of loans. If borrowers will avail themselves of these loans, which will,

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obviously, on the principles already set forth, take chiefly the form of bank credit rather than of cash, a lower rate of interest becomes possible. But it becomes possible only because borrowers are making use of waiting which would in any case be done, only because such use enables society to get along with less of other currency, presumably with less of gold, and so enables a larger amount of society's total capital to be held in other forms.¹

These conclusions apply no less when the formal arrangement is somewhat different. Not infrequently A buys goods for which he gives his promissory note to B. B endorses this note and deposits it with his bank, and thereby secures a deposit account. The bank is under obligation to honor B's checks upon it for the amount for which A's note was discounted. But A is under obligation to pay the bank. Taking a large number of such transactions, we may say that all the makers of notes so deposited, along with other debtors to banks, are in debt to all the holders of bank deposits, and that the latter are creditors of the former. Business takes place by means of different persons assuming, successively, the position of creditors, through the banks as intermediaries, to such persons as A. The fact that sporadic waiting is brought together, undoubtedly tends to give A's personal note more value, *i.e.* makes the interest

¹ The same principle applies to government paper money, as was shown in Chapter I (of Part I), § 6. In that case, the government is the borrower and pays no interest. So far as bank credit makes impossible the issue of so much paper money by government, the lower interest to borrowers from banks does not involve economy in the use of gold and lower average interest. For then the government itself, having to borrow by issuing more bonds than would, perhaps, be necessary if it issued credit money, must pay interest which, otherwise, it would not have to pay. This conclusion does not mean, of course, that inelastic government paper money is to be preferred to elastic bank credit; nor does it mean that government paper money is to be preferred to bank credit, on other accounts.

he has to pay somewhat lower. The bank can give more for the note than it otherwise could, just because its own creditors will not all want cash at once, just because its lending power (for the bank is making itself a creditor of or lender to A) is made greater by the existence of the sporadic waiting which it has combined; and since the bank can give more for the note to B, B can give more for it (in goods) to A.

The principle is the same if B deposits, not A's promissory note, but a bill (or draft) on A, payable in some 30 or 60 days, for goods shipped to A. This draft will be presented to A for his signature as soon as possible. That is, A will be expected to acknowledge his indebtedness by "accepting" the draft.¹ The bill (or draft) thus becomes, in effect, A's promissory note indorsed by B.

In Europe, particularly in England, still another method of securing bank credit is common. This is the method of bank acceptances.² The would-be borrower, A, instead of directly borrowing of his bank a checking account, or instead of giving his creditor, B, a promissory note, for deposit, if desired, in B's bank, or instead of having B make out a draft directly upon him, gets some bank to agree to "accept" (*i.e.* become responsible for the payment of) drafts which B may draw upon this bank up to an agreed amount. A can then pay to B whatever is owing to the latter, by arranging to have B draw a draft upon the bank with which the agreement has

¹ For fuller discussion of such "bills of exchange" and their security, see Ch. III (of Part I), § 7.

² For a description of acceptances and a study of their effects, see Lawrence Merton Jacobs, "Bank Acceptances," National Monetary Commission, 1910. See further, also in National Monetary Commission, Paul M. Warburg, "The Discount System in Europe," pp. 7-13.

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been made. The bank in question will undertake to pay the draft when it becomes due, say in 60 days. But the agreement is that before it does become due, A shall provide the bank with the necessary funds. The bank with which the agreement is made, guarantees payment to B, but does not expect to draw upon its own resources in making such payment. B can deposit the draft with his own bank for credit. B then has a right to draw from his own bank on demand; his bank has a claim upon the bank with which A made the above described arrangement; and this bank has a claim upon A. B, or those receiving from him checks upon his bank, may be regarded as the ultimate creditor or creditors; A is obviously the ultimate debtor. The banks are intermediaries. Also, the banks have brought together the waiting of those who successively, for periods dictated by their own convenience, become creditors of the banking system by receiving checks or deposit rights based on the draft for which A is ultimately responsible. Further, the fact that this sporadic waiting is made available as actual lending, means that B's draft on the bank will be discounted at a somewhat lower rate than it otherwise probably could be, and will therefore bring a better price. Since the draft for a given sum has thus a somewhat higher value to B than it would else have, the latter will be ready to charge A in payment for any definite amount of goods sold, a somewhat lower price than otherwise. In effect, because of the waiting made available by the banking system, A borrows at a lower rate of interest. The same principle is involved if, as frequently happens, A himself draws a draft upon a bank which agrees to "accept" it, and sells it to another bank for credit. Those who receive A's checks on this

credit, in payment for goods, are then the ultimate lenders in the sense above explained.

Whatever the formal arrangement by which bank credit is utilized, the charges to the borrowers or debtors (for, in the last analysis, it is always the borrowers or debtors who pay) must be enough to cover the cost of banking service. These charges must remunerate the banks for concentrating waiting where it has the greatest usefulness. They must cover salaries of bank officials, depreciation of bank property, interest on the capital invested by the banks themselves, and compensation for the risk to the banks, of insolvency, for the banks, though chiefly go-betweens or intermediaries, do nevertheless *insure* the credit of borrowers. If all the borrowers failed to make good, the banks must fail; but within limits the banks can and do guarantee depositors. This they do, largely, by maintaining cash reserves of perhaps $\frac{1}{10}$ to $\frac{1}{4}$ of their deposits, according to conditions and the requirements of law, from which they can liquidate as many of their demand obligations as are likely to be suddenly presented for payment at any one time. On these reserves, as on their other capital, the banks expect to realize a reasonable interest.

In other words, the payments made by borrowers must cover the cost of banking plus a fair return on banking capital. These payments would not do this if the demand for loans from banks were very small, and if such demand could be sufficiently met by the funds of depositors who would be willing to pay the cost of banking, for the sake of the convenience of banking service. The demand for bank loans, however, is far in excess of what could be supplied by means so trivial, and is, indeed, sufficient to throw upon borrowers or

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debtors as such, the whole cost of banking service. When those who, through the intermediation of banks, are the ultimate lenders or creditors, have become such by having the promissory notes of or drafts on their debtors discounted, the creditors may seem to be paying the cost of banking. But, in such cases, they have, presumably, made allowances for the bank rate of discount, in the prices they have charged for goods sold, and the debtors, therefore, really pay for the services of the banks.

The payments by borrowers or debtors may be regarded, then, as real interest payments in the sense that the ultimate lenders profit by the existence of a place of deposit other than their own vaults, for which they do not have to pay, and profit further by the facility of check payments thus made practicable. If no money interest is received by the ultimate lenders, the amounts paid by borrowers are, in the long run, because of the competition of different banks, determined by the labor cost of rendering the service, plus the interest (including compensation for risk) on the cost value of the machinery, such as buildings, necessary reserves, etc., used in bringing borrowers and real lenders together. If, however, there is not a sufficiency of this "convenience waiting" to be had to supply the demand for loans at the mere cost of concentration, then the banks will bid against each other, not so much to cut down the charge for the service performed for borrowers, as to get deposits. Hence we are beginning to see direct interest, though at low rates, very generally offered on deposits subject to check, either on monthly balances or otherwise.

§ 5

Application of Principles Arrived at, to Bank Notes

The same principles apply to bank notes as to bank deposits. The bank note, when issued on the sole responsibility of a bank, is, like the deposit, a credit obligation of the bank to the holder. The holder is entitled to specie or other legal tender money on demand. As with deposits, these rights to draw circulate from hand to hand in payment for goods. And as with deposits, the real lender or creditor is the person who receives the bank notes, which represent only a claim in payment for goods sold; while the ultimate debtor is the person — or the persons — who has borrowed the bank's credit in this form, either directly or by any of the methods just described in relation to deposits, and is under obligation to repay. The bank is a legally responsible intermediary, but is chiefly dependent, in the long run, for means to redeem, on repayment of loans by its debtors. The bank, in the main, is merely an intermediary, although, as with deposits, part of its own capital serves as an insurance fund to cover all contingencies which are reasonably likely to occur.

But the holders of bank notes are frequently given, by government, greater protection against loss than the holders of deposits. In Canada, for example, the note-issuing banks have to contribute to a special reserve fund, to redeem the notes of failed banks, besides which note holders have a prior lien. In the United States, note holders are insured against loss by the Federal government, which makes itself ultimately responsible for all notes issued in conformity with the national banking law, and, therefore, for all bank notes issued, since a

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10 per cent tax on other bank notes effectually keeps them out of circulation. The notes issued by national banks are based chiefly¹ on government bonds. Each national bank must have purchased bonds of the United States, the par value and also the market value of which shall be at least equal to all its notes in circulation. These bonds must have been deposited with the Comptroller of the Currency. The banks must also have deposited in cash a redemption fund of 5 per cent of the face value of their notes. In consideration of these safeguards, the United States assumes ultimate responsibility for the redemption of the bank notes in case of the failure of any bank, and, in fact, undertakes to redeem the notes currently for those persons presenting them, out of the 5 per cent redemption fund. These bond-secured bank notes will, however, be gradually withdrawn over a period of years. The recent Federal Reserve Act permits their gradual retirement and, in addition, the 2 per cent government bonds, on which alone they can be based, will, as they mature, be permanently withdrawn. The recent Federal Reserve Act, however, creates from eight to twelve² Federal reserve banks through which Federal reserve notes shall be issued. Back of these the Federal reserve banks must keep a 40 per cent gold reserve, of which not less than $\frac{1}{8}$, or 5 per cent, shall be in the Treasury of the United States. These notes are to be, in each case, a first lien upon the assets of the bank through which they are issued. But the government makes itself ultimately responsible for their redemption. The notes

¹ The provisions of the Aldrich-Vreeland emergency currency measure will shortly be superseded by those of the Federal Reserve Act of 1913. The Aldrich-Vreeland Act cannot be availed of after July 1, 1915. The new law is already (August 1914) being put into operation.

² Made twelve by the Organization Board.

are issued to the Federal reserve banks for them to lend out, at the discretion of the Federal Reserve Board, a government regulating body. They partake in part of the character of government paper money and in part of the character of bank notes. It is customary in European countries also, to safeguard especially bank notes as contrasted with deposits. The holder of a deposit is supposed to become a depositor only deliberately and after consideration of the financial soundness of his chosen bank. But bank notes circulate from hand to hand as "money," are received often in the form of wages by the comparatively poor, and are not usually scrutinized to see from what bank they come; nor is the soundness of the bank usually considered.

§ 6

Quantitative Statement of the Relation of Money, together with Bank Credit, to Prices

The foregoing explanation of the nature of commercial banking operations makes clear, it is hoped, that these operations economize the use of money and why they do economize such use. The rights to draw from banks, thus circulating in place of government or "lawful" money (whether these rights are evidenced by checks or by bank notes) we may call M' , and the average velocity¹ with which they circulate, V' . Then our equation becomes²

$$MV + M'V' = pq + p'q' + \text{etc.}^3$$

¹ Estimated by Fisher, *Purchasing Power of Money*, p. 285, as averaging, in recent years, towards 50.

² Stated in Ch. I (of Part I), § 1, without the inclusion of bank credit.

³ The equation of exchange has been so stated as to include credit, by Kemmerer, *Money and Credit Instruments in their Relation to General Prices*, New York (Holt), 1907, p. 75; and by Fisher, *The Purchasing Power of Money* p. 48.

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The general level of prices is somewhat higher and the value of money is somewhat lower, because of the additional use of credit. The conditions of supply and demand require a somewhat higher level of prices, just as we have seen that they do when there is more money. Gold is cheaper. The demand for it is less. It does not need to be produced, and cannot profitably be produced, at such a low margin, *i.e.* from such unfavorable sources of supply, as would otherwise be worth while. But this bank credit is not altogether an *addition* to currency; it decreases the amount of gold money, and so is largely a *substitution* of a cheaper for a dearer currency.

But if bank credit can thus take the place of money, is there any limit to such substitution? Why might not credit expand and prices rise, or money be pushed out, indefinitely? The answer is that the amount of bank credit is pretty definitely related to the amount of money. In the first place, a certain amount of cash is needed in the banks, to maintain confidence. The amount so needed bears a relation to the amount of bank credit, and must be some reasonable per cent of such credit. Otherwise, the public is likely to become frightened and demand cash, and this cash cannot be paid. A margin against such contingencies is always essential and, for national banks of the United States and Federal reserve banks, as well as frequently for State banks, is required by law. Reference has just been made¹ to this requirement in the case of the Federal reserve notes. So the total bank credit is related to the total bank reserves or cash in the banks.² Banks maintain the proper relation between deposits and reserves, by adjusting their rates of interest (or dis-

¹ § 5 of this chapter (II of Part I).

² White, *Money and Banking*, third edition, Boston (Ginn), 1908, p. 197.

count) charged to borrowers. If the deposits are in danger of becoming too great, relative to the reserves, a higher charge to borrowers will discourage borrowing, and so will limit the increase of those deposits which originate in the borrowing of deposit rights (or in the discounting of notes and acceptances).

The total bank credit is related, also, to the total cash in circulation.¹ Bank deposits passed by means of checks are absolutely unavailable for very many transactions. They are unavailable when the maker of a check is unknown, and they are unavailable, practically, for small payments, such as street car fares. Even bank notes cannot fill up the entire circulation when, as is usually the case, the government allows them to be issued only in relatively large denominations. The smaller denominations are needed and government money is used. Business convenience, then, also compels a relationship between the quantity of bank credit and the quantity of government money.

Since the quantity of bank credit is related in these two ways to the quantity of government coined and government issued money, changes in the latter tend to bring proportionate changes in the former. It is still true that prices depend upon the quantity of money, though the dependence is in part indirect. The demand for goods comes from those who have bank credit to offer as well as from those who have only money. And we may now speak, not merely of the supply of money and the demand for it, but of the supply of currency (including both money and circulating credit), and the demand for it.

¹ Fisher, *The Purchasing Power of Money*, p. 50.

§ 7

Fluctuations of Bank Credit

But though the amount of bank credit is thus related to the amount of money, the ratio between them is slightly rhythmic rather than definitely constant. During periods of hope and confidence, bank credit tends to expand, and prices to rise. During periods of distrust and depression, the volume of circulating credit tends to be smaller, and prices to be lower. When prosperity is generally expected, business men are anxious to extend their credit by borrowing of the banks for the purchase of merchandise and for other business purposes. The banks can then increase their deposits by making loans, as much as their available reserves will permit. When, for any reason, doubt and fear prevail, even low discount rates may not induce an equal amount of borrowing.

The sharpest changes in the relation of the quantity of circulating bank credit to the quantity of money come as the consequence of panic. So far as a panic is foreseen, the banks endeavor to prepare themselves for it by decreasing their demand liabilities in relation to their cash on hand or reserves. That is, they cut down their loans by raising their rates of discount. As the panic spreads, the necessity of such a policy becomes evident to nearly all the banks. Any bank may suddenly find itself subjected to the danger of a run upon it, and dares not increase the danger by making extensive loans. Those banks upon which there actually are runs, find themselves with depleted reserves, and are peculiarly unable to extend credit. The bank rate of discount, then, rises

rapidly, while the volume of bank credit, M' , decreases, and prices fall.

At such a time of stress, a great national bank (or a few great banks) which keeps large reserves beyond the requirements of ordinary years, is a tower of strength, and can usually prevent any general collapse of credit. Such an institution is the Bank of England, which holds itself responsible for the credit structure of the nation, and maintains always an emergency reserve. In the United States, the recent Federal Reserve Act (of 1913) directs the establishment of not less than eight or more than twelve¹ Federal reserve banks. All national banks, and all other banks which become members of the system,² are required to keep a portion of their reserves in one of the Federal reserve banks. The aim is to have a large part of the nation's banking reserve concentrated in these few large banks so that ample means may be available in time of panic for the aid of any sound bank which finds itself threatened by the unreasoning fear of depositors. The Federal reserve banks are themselves required to keep each a 35 per cent reserve in lawful money against deposits and a 40 per cent reserve in gold against the Federal reserve notes which they have outstanding. This requirement insures the maintenance in ordinary times of a reserve which may be needed in case of a financial crisis. But when there is financial crisis or the fear of it and many banks are curtailing their loans, one of the things most needed is the assurance that credit can be secured by those whose assets are good and whose business is dependent upon credit. At such a time new reservoirs of credit may need to be opened

¹ Made twelve by the Organization Board.

² With a temporary exception stated in the act.

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until the old ones, temporarily closed, are again unlocked. The new law therefore provides that the Federal Reserve Board, the government regulating body, may temporarily suspend any of the reserve requirements, but only by levying a proportional tax on the banks so favored.

But while it is desirable that the violent credit fluctuations associated with crises should be avoided, some seasonal rise and fall of bank credit is desirable. In agricultural countries, particularly, the amount of trade immediately after the crop season is greater than at other times, and an alternate expansion and contraction of bank credit, corresponding to the expansion and contraction of business, tends to keep prices more stable rather than to make them less so. In the United States, the circulation of the Federal reserve notes provided for in the new currency bill, and the gradual retiring of the old bond-secured bank notes, will tend to an elasticity of bank credit in the form of notes, comparable to, though perhaps less than, the elasticity of deposits. The new law requires that no Federal reserve notes originally issued by one Federal reserve bank shall be paid out by another such bank but shall be sent promptly for credit or redemption to the issuing bank. The effect of this provision must be to give at least some slight elasticity to the volume of these notes. For the notes will be lent out as business conditions favor, and will pass into circulation. They will then be used by borrowers, along with other means of payment, to liquidate debts to the various banks, will flow in considerable volume to the Federal reserve banks, and must then be cancelled against other debts or redeemed. Bank deposits in the United States are normally elastic, and will doubtless continue to be so. The

banks lend perhaps nearly all their reserves will support, at certain times, and at other times accumulate reserves in preparation for the season or seasons of largest lending.

§ 8

Summary

Let us now bring together, in brief compass, the main conclusions of this chapter. We saw, to begin with, that credit does not really act as a substitute for money unless there is the possibility of cancellation, unless the same credit (though not necessarily the same paper evidence of it) circulates more than once. It usually does this in the case of the bank deposit or right to draw from a bank. This right to draw, circulating by check or draft, is a substitute in trade for legal tender money, tends somewhat to increase the total supply of currency, and tends to drive out other currency.

Analysis of the relations of the various parties concerned, to each other, showed that, apart from their function of insuring the credit of borrowers by risking some capital of their own, banks are really but intermediaries between those who borrow of them, and the real lenders. These lenders are the depositors, since it is the depositors who have given up present goods by depositing, in the banks, money which they might have spent, by accepting checks in return for goods sold, or by receiving the promissory notes of or drawing drafts on the purchasers of the goods, and having such notes or drafts discounted by banks. If the borrowers as a whole were unable to repay, then the banks would be unable to pay the depositors what the latter were entitled to. What the banks do is to bring together borrowers

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and lenders, making available to borrowers, in the form of loans, sporadic waiting which would in any case exist. Through the institution of commercial banking, trade is carried on by means of people becoming successively and alternately each other's creditors. The demand for loans from borrowers is sufficient to throw upon them the cost of maintaining the banking system. Nevertheless, the existence of that system, by making possible the bringing together of sporadic waiting, tends to make the interest charge to borrowers lower than it would probably otherwise be. Bank notes involve the same principles as bank deposits, though the holders of bank notes are commonly protected or insured to a greater degree by government than depositors.

Bank credit is related to the quantity of money by the habits and business requirements of the community and by the necessity of a sufficient reserve. But the relation between bank credit and money is rhythmic rather than exactly constant. The fluctuations seem to be, in large part, closely connected with the alternation of business confidence and business distrust, and with the occurrence of panics. The banking system should be so well organized and conservatively managed as to minimize such fluctuations of credit. On the other hand, a certain degree of elasticity in bank currency, making it expand and contract according to the *seasonal variations of trade*, appears to be desirable.

CHAPTER III

THE NATURE AND METHOD OF FOREIGN EXCHANGE

§ I

The Function of Bills of Exchange

IN the last chapter we saw that in the most highly civilized countries, particularly the English-speaking countries, the largest part of trade is carried on by means of bank credit. This form of credit, circulating by means of checks, is, in the United States, of almost universal use as to all large scale dealings within a city or other circumscribed area.

We saw, also, that the use of this bank credit, through checks or bank notes, is merely a means by which borrowers and lenders are brought together, the bank being but an intermediary; that it is a means by which one person or firm can become, in the sense explained in the preceding chapter, a debtor successively to a second, third, fourth, fifth, etc., so that money has only to pass from the first through the bank or through two or more banks and a clearing house, to the last. All the intermediate transactions may then cancel, or cancellation may at times be complete, so that no balance remains. Cancellation of these serial and opposing debts thus becomes our principal means of carrying on modern business. And trade is still, in the last analysis, as in primitive barter or as where money is the medium, an exchange of goods for other goods. We buy goods and become, in

effect, debtors. We sell goods and become creditors. The debts cancel and we have traded goods for goods.

Bills of exchange enable us to extend ~~this~~ system of credit beyond the town or city, beyond the state, beyond the nation. Business firms separated hundreds of miles from each other can become debtors and creditors of one another through the intermediation of the banking and exchange system. The credit structure becomes international. Through the commercial and the exchange banks, a New York firm can become, in effect, successively the debtor of a London firm, another London firm, a Glasgow firm, a Berlin firm, a Boston firm, and another New York firm. That is, these different business houses successively become claimants of the banking system, through their receipts of checks or drafts from one another, or through their drawing bills of exchange on one another, or both, of the sum, or part of it, originally borrowed from a New York bank, as a deposit, by the first mentioned New York firm. In trade between nations, or between widely separated parts of the same nation, credit is used, debts in large part cancel, and money is used to a relatively small degree.

Bills of exchange or drafts serve in large part, then, the same purposes as ordinary checks. Over long distances, however, whether business crosses national boundaries or not, the "customer's check" is not likely to be satisfactory. The receiver may have hard work to cash it or to get for it an immediate addition to his bank balance. In the distant locality to which the check is sent, nobody, probably, knows the maker well, or knows whether the maker's check is good. In this regard, the bank draft is superior. Or the creditor may not wish to wait for what is owed to him, until a check arrives

from his debtor. In this regard, a commercial draft is superior.

Foreign and domestic exchange are in principle the same. The former involves payments between persons in different countries, countries which have, generally, different currencies and which are often separated from each other by natural barriers. Domestic exchange involves dealing between different parts of the same country, but parts too far from each other for the ordinary, convenient use of checks.

§ 2

The Nature of Bills of Exchange

Let us now inquire what is the nature of the bill of exchange. Suppose, to take the simplest possible case, that B owes to A the sum of \$1000, and that A owes a like sum to C. The form of settlement will be that of the bill of exchange if A orders B to pay C. When B complies with the order, his debt to A and A's debt to C are both liquidated. Usually the bill of exchange involves an exchange banker or broker as one of the parties. But in any case it is always of the form: A orders B to pay C.

The reader may at once note that in so far the bill of exchange resembles the ordinary check, which is, in fact, but one species of bill of exchange. But a distinction can be made, based partly upon the relation of a bank or banks to others concerned. In the case of the "customer's check," A, the drawer, is a mercantile or industrial establishment or a person, while B, the drawee, is always a bank. In the case of the commercial draft, A and B are usually persons, or commercial or industrial establishments (except that, as with the "bank acceptances" de-

scribed in the previous chapter,¹ B's bank may be designated by him as the drawee in his place), while C, the payee, is usually, though not necessarily, a bank. In the case of the bank draft, both A, the drawer, and B, the drawee, are banks. The payee may be a person or an ordinary business firm. Furthermore, a check is always a demand claim (a demand draft of one bank on another is frequently called a "check"), while a draft may or may not be. We shall have occasion to notice, later on, the significance of some of these different relations. What we have here to emphasize is that the bill of exchange or draft and the ordinary check are exactly alike in involving three parties, of whom one orders a second to pay a third; and that the distinction rests, in part, upon the position which the bank or banks concerned, if any, occupy in relation to the other persons or person.

§ 3

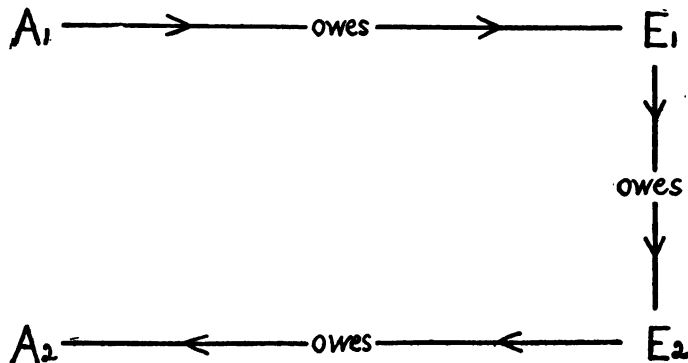
How Bills of Exchange Might be Used to Settle Obligations, Assuming no Banks

If credit is to serve appreciably as a medium of exchange or substitute for money, then when credit is given there must generally be three parties. When there are but two persons concerned, the giving of credit is usually only a postponement of payment. There is not an avoidance of the use of money, except in those comparatively rare cases where B's debts to A now are balanced, or partly balanced, by later obligations incurred by A to B. Then, of course, credit may lead to cancellation. If three or more persons are concerned, in addition to banks or other intermediaries (and even if banks are

¹ § 4 of Ch. II (Part I).

included in the three, this would be true in form), cancellation always takes place.

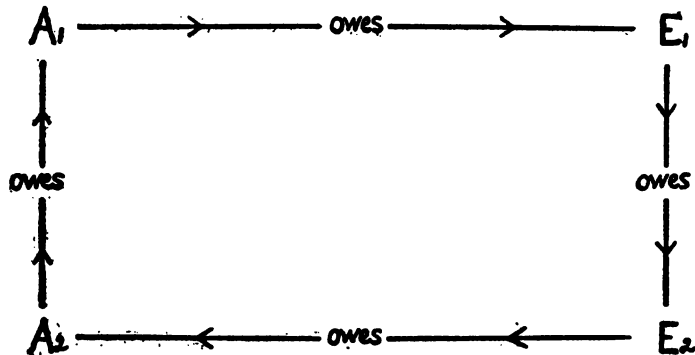
But we have yet to see just how bills of exchange or drafts are used to balance obligations in foreign trade. To begin with, we shall take, as being the simplest, a case seldom realized in practice, namely, where four parties can settle up their various debts without resort to any bank, exchange broker, or other go-between. Suppose that an American merchant, whom we shall designate as A_1 , owes to an English manufacturer, E_1 , the sum of £100 (\$486.65), while the latter owes as much to an English merchant, E_2 , who in turn owes an equal sum to an American manufacturer, A_2 . We may represent the situation, graphically, as follows :



Obviously, if the parties all know each other and know of the situation, they can very easily settle all three debts with but one use of money. E_1 may make out a bill on A_1 ordering him to pay E_2 . Thus E_1 cancels his debt to E_2 . E_2 may then indorse the bill, making it payable to A_2 , thus liquidating his (E_2 's) debt to A_2 . Finally, A_2 presents the bill to A_1 , who cancels his debt

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to E_1 by paying it. Thus, three debts have been paid with but one use of money. Suppose that, in addition to the other debts, A_2 owes \$486.65 to A_1 . Then our diagram would be :



A_2 might then pay by indorsing the bill to A_1 , who would, therefore, have only to pay himself. In that case, four debts would be settled with no use of money at all.

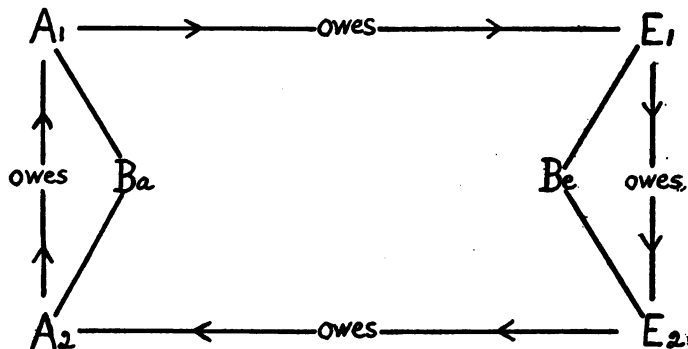
§ 4

Settlement of Obligations by Drafts (Bills of Exchange), through Intermediation of Banks, Assuming Creditors to Draw Drafts on Debtors

Our illustration, however, must be modified if it is to picture the usual commercial practice. The different parties having occasion to use or to pay drafts or bills of exchange cannot be expected, ordinarily, to know each other. They must therefore deal with middlemen, with the so-called exchange bankers or exchange brokers. When foreign exchange is carried on through the intermediation of bankers or exchange brokers, each bill of exchange is still of the form, A orders B to pay C. But

an exchange banker is now in the position of both A and B, or of C.

There are several ways by which debts can be settled through the use of the exchange banking machinery. One way is for the creditor to draw upon the debtor, ordering him to pay a bank. Another is for the debtor to remit to the creditor by sending the latter a bank draft. Let us take up, first, cases where the creditor draws on the debtor. We will suppose the same four persons, A_1 , A_2 , E_1 and E_2 , but will now assume what is the usual, if not indeed the universal, fact, that they deal with each other through middlemen. These middlemen may be two banking houses dealing in foreign exchange, one, B_a , an American bank; and the other, B_e , an English bank. We shall suppose, as before, that A_1 owes E_1 , E_1 owes E_2 , E_2 owes A_2 , and A_2 owes A_1 . All that is needed for cancellation is that the parties be brought together. Diagrammatically this situation is:



E_1 makes out a draft on A_1 ordering A_1 to pay B_e . E_1 may be said to sell this draft to B_e . E_1 's bank, B_e , may then give E_1 the money, but will more probably (since E_1 is likely to prefer it) put the amount to his credit as

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a depositor. B_c sends this draft, directly or indirectly, to B_a for collection. B_a will subtract it from the credit account of its customer, A_1 . So far, no money has been used. E_1 has an addition to his deposit account. A_1 has suffered a subtraction from his. E_1 has the claim on the banks which A_1 has lost. E_1 may now settle his obligation to E_2 by a check on B_c . E_2 then realizes an addition to his deposit account with B_c , while E_1 suffers a diminution of his bank account. Next, A_2 may make out a draft on his debtor, E_2 (or, as where E_2 has arranged for "acceptances," directly on E_2 's bank), ordering E_2 (or his bank for him) to pay B_a . B_a may send this draft to B_c for collection. A_2 now has an addition to his deposit account in B_a . E_2 's bank account is decreased. Lastly, A_2 settles with A_1 by check on B_a . A_1 has now an addition to his bank account which may cancel the original subtraction, while A_2 suffers a subtraction which may be equal to the previous addition. Four debts may have been cancelled, with no use of money. In any case, there has been less use of money because of the use of drafts, for the banks concerned compare accounts, and only net balances have to be paid in money or in gold. The use of bills of exchange extends to trade between nations, and equally to trade between widely separated parts of the same nation, the operation of the bank credit system.

Even if we suppose that B_a (for example), the exchange bank which collects the draft on A_1 , is not the bank in which A_1 regularly keeps a deposit account, nevertheless the rule that trade is carried on by a cancellation of credits, still holds. Though B_a , upon receiving from B_c the draft drawn by E_1 upon A_1 , cannot then directly subtract the amount from A_1 's account, it can call on A_1

for payment. Either the draft will be made payable to A_1 's bank and by that bank subtracted from his deposit there, or it will be presented directly to A_1 himself, in which case he will probably pay it by giving B_a a check on his own bank. In any case, then, E_1 's bank account will probably be increased and A_1 's bank account decreased by virtue of the draft.

On the other hand, A_2 's bank account will be increased when he sells his draft on E_2 , though he sells this draft to an exchange dealer not engaged in a regular banking business. For such an exchange dealer will presumably pay him for his draft by means of a check upon some bank, which he can then deposit for credit in his own bank. His deposit account is increased and E_2 's is decreased by the transaction. In any case, B_a , or some other exchange bank, has to pay A_2 , directly or indirectly, and receives payment, directly or indirectly, from A_1 ; in any case, B_a collects one draft for B_a and sends one draft to B_a for collection. In any case, there is cancellation, and the shipment of gold is wholly or partially avoided. A_2 may pay A_1 by check as above suggested, or, if they are widely separated, A_1 may draw a domestic draft on A_2 and deposit the draft in his bank for credit. The draft will go to A_2 's bank or to A_2 for collection and A_2 's bank account will be decreased.

Attending only to the international relations involved, we may say that A_2 's draft on E_2 constitutes part of the supply, in the United States, of bills on England. The desire of an American bank, *e.g.* B_a , to purchase this bill, signifies a demand, in the United States, for bills on England. This demand may be said, in the last analysis, to result, partly, from the necessity which some American bank (or banks) is under, of remitting to an English

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bank or banks, after collecting for the latter; and so may be said to result, to some extent, from the supply, in England, of commercial drafts on Americans. We may assert, therefore, that the supply of such commercial bills on America, in the English market, corresponds, in part, to demand for bills on England, in the American market, and, in part, gives rise to this demand. The basic principle is of course similar in the relations between different parts of the same country. In general, supply in one place, of commercial bills on another, gives rise to demand in the other, for bills on the first.

To avoid misunderstanding, it should be pointed out that foreign exchange, in the complications of practical business, is often three cornered, four cornered, etc., involving merchants and banks of several countries. Thus, Americans may have purchased goods of English merchants; the latter may have bought goods in Germany; and Germans may have imported goods from the United States. Supposing the creditors in each case to draw upon their debtors,¹ there would be sold in England, drafts on merchants in the United States; in Germany, drafts on English purchasers; and in the United States, drafts on Germans. The drafts in England, on Americans, would be sent to American banks*for collection. The American banks must then settle with their English correspondents. This would create a demand for drafts on foreign countries, but might not directly create a demand for drafts on England. For the American banks might purchase drafts on Germany and send these in settlement to their correspondents in England. These drafts would be collectible through German banks, which might settle

¹ See, however, § 5 of this chapter (III of Part I).

by purchasing, and sending to their English correspondents, the drafts on England drawn by German exporters. In practice, then, the supply in England of drafts on the United States may not directly give rise to a demand in the United States for drafts on England. Instead, it may lead to a demand in the United States for drafts on Germany, and to a demand in Germany for drafts on England. These complications should not be overlooked, but, since they introduce no new principle, they may, for simplicity, be ignored in most of our study.

§ 5

Settlement of Obligations by Bank Drafts, when Debtors Remit to Creditors

Obligations between persons in widely separated places may also be cancelled through the use of bank drafts. Instead of creditors *drawing* on their debtors, the debtors then *remit* to their creditors. What method shall be adopted in each case will depend upon the understanding between the parties concerned as creditor and debtor. If A_1 owes E_1 and is to pay by means of a bank draft, he may go to the bank, B_a , and request such a draft payable to E_1 . This he will pay for out of his deposit with B_a , or by a check on whatever bank he has an account with, or (conceivably but rarely) with money. The draft A_1 gets is really a kind of check made out by one bank on another. B_a makes out an order upon B_e (or some other English bank) requiring payment to E_1 . This order is handed by the American bank to A_1 , who sends it to E_1 , and the last named person is then in a position to present the draft for cash or, more probably, credit, to B_e or to his regular deposit bank. E_2 may simi-

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larly settle with A_2 by getting a draft from B_c ordering B_a to pay A_2 . We may suppose E_1 to settle with E_2 and A_2 with A_1 by check, as before. Or we may suppose that they are separated from each other by considerable distances and likewise settle with each other by using bank drafts. The matter of form is unessential. In any case, most obligations, both international and intranational, can be settled by cancellation, through the banks.

Where settlement is made by the use of bank drafts, there must, of course, be some arrangement between the banks concerned, such as deposit accounts kept by each with the other, so that all of these drafts will be honored without question. There is no need of any special arrangement in the case of checks, since these can be sent at once, and with no appreciable loss of time in transit, through a clearing house, to the bank on which they are drawn. But with bank drafts, used where the distances are greater, the situation is otherwise.

Where bank drafts are used, these constitute part of the supply of drafts, and the demand for them is a demand by persons and by business houses, who have remittances to make, as well as by banks. Thus, a part of the supply, in the United States, of bills on England is made up of the drafts of American upon English banks; and a part of the demand, in the United States, for bills on England is the demand for bank drafts, by business houses having obligations to meet in England and desiring to meet them in that way.

Third, cancellation may take place by the use of both of these methods, *i.e.* by both drawing and remitting. For instance, A_2 makes out a bill on E_2 ordering the latter to pay B_a . B_a sends it to B_c for collection (or discount). B_a thus gets a claim upon or a credit with B_c . A_1 desires

to remit a bank draft to E_1 . He seeks of B_a , such a draft. B_a , having purchased A_2 's draft on E_2 and secured a credit balance in England, is able to sell A_1 a draft on B_a payable to E_1 .

This is the way in which, as a matter of practice, most of our transactions with England are settled. When Englishmen owe us, we usually draw drafts upon them or their banks, *i.e.* we draw upon London. We do not, as a rule, arrange for them to remit drafts on New York. On the other hand, if we owe them, the understanding commonly is that we shall purchase drafts on London and remit. American banks, then, buy drafts on London from those Americans having English debtors, send these drafts to their London correspondents, and, on the balances in London so secured, sell drafts on their London correspondents to Americans having English creditors. The opposite operations are indeed carried on, but they are much less common. In general, it may be said that other countries draw drafts on England in much larger volume than England draws upon them.¹

Three-cornered exchange, also, may involve chiefly bills on London. Thus, if Americans have exported cotton to England and imported mechanical instruments from Germany, while Germany has purchased cloth of England, drafts on London may be used in part for all three settlements. American exporters of cotton will draw drafts on the English purchasers. These drafts may be used, in part, by American banks, for remittances to Germany, as a basis for the sale of bank drafts to American importers who must remit to Germany. German banks will, in turn, send these drafts on the

¹ Clare, *The A.B.C. of the Foreign Exchanges*, London (Macmillan), 1893, p. 12.

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English importers of cotton to England, in order to maintain balances there for the sale of drafts to remitting German importers of cloth.

London is, in fact, the world's greatest financial centre. Partly, perhaps, because banking is most fully developed in England, partly because of the magnitude of England's foreign trade and the fact that payments have to be made to English exporters by merchants of all other countries, drafts on London are nearly everywhere in demand. Sellers of goods, in most parts of the world, usually prefer to take advantage of this fact and realize on their sales at once. On the other hand, English exporters more usually, though not always, wait for remittances from foreign purchasers of their goods. The loss of time necessarily incident to exchange transactions falls, then, except as it is allowed for in higher prices of goods sold, more largely on English manufacturers and merchants and less largely on other countries.

Coming back to the consideration of trade between England and the United States, we may conclude that drafts drawn by American business houses on English business houses (or upon banks properly designated by the latter), and drafts drawn by American banks upon English banks, are both part of the supply, in the United States, of bills on England. The demand for such bills has also a twofold source. It comes, first, from those persons and firms other than banks, who have obligations to meet in England which they wish to meet by remitting bank drafts. Second, the demand comes from banks which may desire bills of exchange on England for either or both of two purposes: in order to maintain accounts in England, against which they may sell bank drafts; and, though less frequently, in order to remit

funds to English banks which are sending to them, for collection and settlement, drafts on American business men. As there is, in the United States, both supply of and demand for exchange on England, so there is, in England, both supply of and demand for exchange on the United States. The case is similar in our commercial relations with other countries, and in the relations of different parts of the United States itself, to each other.

§ 6

How Exchange Banks Make Profits

A market may be defined as the coming together of buyers and sellers. It therefore involves all the mechanism necessary to facilitate their intercourse. One may speak of a general market or of a local market, of a market in one or in another place. Thus, there is the New York market for the buying and selling of exchange on London. A bank in New Haven, Conn., may be a part of that market if it buys from and sells to it. That market includes, besides the commercial and industrial organizations which buy or sell drafts, all middlemen of whatever class who engage in the trade.

The middlemen may be divided roughly into three classes.¹ First may be mentioned banks which do a regular foreign exchange business, buying bills from those who have them to sell and selling their own drafts on foreign correspondents to persons desiring to remit. Much of this business is done by foreign exchange banks which carry on little or no other business. Some of it is done by ordinary commercial banks, such as United

¹ Cf. Escher, *Elements of Foreign Exchange*, New York (The Bankers Publishing Company), 1911, p. 60.

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States National banks, in addition to their other banking business. Second, we may call attention to those exchange dealers whose principal business is to buy commercial and bankers' bills, and to resell them, chiefly to banks. Third are the independent brokers who make small commissions by bringing buyers and sellers together. These do not invest their own capital, do not, that is, buy bills of exchange in the market, but assist those desiring to sell bills to find buyers, and *vice versa*.

The bankers and brokers engaged in the business of foreign exchange make their money from commissions and by the difference between what they pay for exchange and what they get for it. Thus, when a bank sells its own drafts drawn upon a correspondent bank, it will probably expect to receive a better price than it is willing to pay for the commercial drafts it buys and remits. Its credit is probably better than the credit of most mercantile and industrial establishments, and its drafts, therefore, more to be desired. And it will hardly care to engage in the business without receiving some profit as a reward or payment for its services.

It might be supposed that business men, *e.g.* in the United States, desiring to remit to foreign creditors, would sometimes buy, through the intermediation of exchange brokers, the identical bills drawn by other American merchants on their foreign debtors, instead of remitting by means of bank drafts. This, however, while perfectly possible, is seldom done in practice. Perhaps one reason is that the business man desiring to remit has much more confidence in the credit of a bank than in the credit of any other company, and hence prefers to buy a claim on a bank to use in remitting. Another and a very practical reason is that an exchange

bank can give a draft enabling the debtor to pay the exact sum owed. Were he to buy merchants' bills, it would be difficult, if not impossible, to make out an even sum, since they would be for various amounts dependent on the requirements of previous transactions. It falls, therefore, to the lot of the banks to buy up bills of exchange or drafts of various amounts, and sell their own drafts, in such sums as are desired, against the credit they thus obtain abroad.

§ 7

Various Types of Drafts

Bills of exchange run for various lengths of time before payment. Some of them are sight drafts, payable on presentation. Others, 30-day bills and "long bills," such as 60-day and 90-day bills, are payable only after the lapse of a definite period following presentation to the drawee. Bills of exchange, furthermore, may be drawn upon and by persons of various degrees of credit. The credit of both drawer and drawee is important, since, as in the case of checks, if the drawee fails to honor a bill, the drawer or maker of the bill is liable to the payee. Both of these considerations, therefore, namely the length of time a bill is to run, and the credit of the drawer and drawee, affect the bill's value.

Bills of exchange may be either "clean" bills or documentary.¹ Clean bills are those which have no attached documents giving security, but depend for their value and salability solely on the reputations of the drawee (who must pay the bill) and the drawer (who is responsible to the holder if the drawee fails to pay). A bank

¹ Escher, *Elements of Foreign Exchange*, pp. 45-52.

draft is an example of a clean bill. Frequently a merchant's draft on another merchant is a clean bill, but this is not so universally the case.

Very usually a merchant's or manufacturer's draft is documentary, *i.e.* has documents attached. Suppose A_2 ships £1000 worth of merchandise to E_2 . He may then draw a bill on E_2 ordering the latter to pay £1000 to B_2 . Before doing this, however, or at any rate before disposing of the draft, A_2 will get from the transportation company by which the goods are shipped, a bill of lading for the goods. He will also, probably, insure the goods against shipwreck or other loss or damage in transit. The bill of lading certifies the claim of A_2 , the shipper, upon the transportation company, to have the goods delivered to the consignee. The consignee eventually secures the goods by presenting the bill of lading to the transportation company. Likewise, the certificate of insurance certifies A_2 's claim upon an insurance company, in case of damage or loss. A_2 , having made out the draft on E_2 , will attach to this draft the bill of lading and the insurance certificate, before disposing of it to any bank. Possession of these documents is then some protection to the bank in case payment is refused. If neither the drawee nor the maker of the draft will or can reimburse the bank, the goods may be sold, because usually hypothecated, and the proceeds applied to that purpose.

A banker, however, is not, supposedly, an expert in the business of selling the goods in question, and may not be able to realize the best price for them without going to considerable expense. Also, the market may not remain steady and the goods may not for that reason sell for enough to cover the bank's advance. The business reputation and the financial standing of the maker

and of the drawee are therefore almost always of importance in determining the value of a draft. If their credit is not established, the maker or drawer cannot hope to receive quite as large an amount for his bill as otherwise he might.

Documentary commercial drafts, other than sight drafts, may be "acceptance bills" or they may be "payment bills." Acceptance is a formal acknowledgment of obligation by the drawee. When a draft is presented to him for acceptance, he writes the word "accepted" and his signature, across its face. Where, as in England, "bank acceptances" are commonly used, a merchant's bank may undertake to "accept" drafts for him and so becomes the drawee. When an acceptance bill is drawn, the drawee has sufficiently good credit so that his acceptance of the draft gives him possession of the bill of lading and therefore of the merchandise; though the draft may be for 90 or 120 days after sight, during which length of time the drawee is not called upon for payment. In the case of the payment bill, the drawee's credit is less good. Though acknowledgment in the form of acceptance will be asked for, he cannot obtain the merchandise consigned to him by merely accepting the bill of exchange, but must actually pay it.¹ If, however, a 30-day, 90-day or other payment bill is paid by the drawee before maturity, he is allowed a rebate or discount from the face of the bill.

In the case of perishable goods, *e.g.* produce, payment cannot be allowed by the purchaser to run, lest the produce spoil. He pays the draft at once, therefore, under

¹ Escher, *Elements of Foreign Exchange*, p. 49. When documentary drafts are made payable a very few days after sight, the documents are apt to be delivered only upon payment. *Ibid.*, p. 52.

the rebate of interest arrangement.¹ But this rebate will be less than the market rate of discount on the draft. For it is not to be expected that an exchange banker should pay a high price for a draft, only to receive from the drawee less than he paid the maker. The banker is likely to safeguard himself against such a contingency by paying for the draft as little as the least he can expect to receive. Looking at the matter from another point of view, we may say that the allowance made for payment before maturity is not likely to be so large as seriously to affect the value of the draft to the maker or seller.

Documentary payment bills sent to England by American banks for collection cannot, in general, be discounted. The principal reason for this is that such a bill is payable at the option of the drawee on any date prior to maturity. If the goods are not perishable and the drawee does not immediately require them, they may be warehoused until he desires them. When this time comes, he obtains the bill of lading by making payment on the draft. It is convenient, therefore, that the draft should remain, until payment, with the banker who originally presented it for acceptance, in order that the drawee may know where payment should be made, when he desires to acquire possession of the merchandise.² On the other hand, acceptance bills drawn on English merchants or English banks are usually sold at a discount in the London discount market by order of the American bank which remits them.

¹ Escher, *Elements of Foreign Exchange*, p. 49.

² Margraff, *International Exchange*, Chicago (Fergus Printing Co.), 1903, p. 115. German banks themselves discount payment bills remitted to them, though at a rate of discount higher than the market rate, while English banks do not. See Margraff, p. 135.

§ 8

The Sale of Demand Drafts against Remittances of Long Bills

After what has been said regarding the discount of bills of exchange, the reader will easily see how banks can sell their own demand drafts against remittances of so-called long bills, *i.e.* bills of 60 days, 90 days, etc. An American bank, B_a, can find out by cable at what rate bills "to arrive" in London on a certain date or by a certain steamer will be discounted. B_a thereupon buys the bills here of persons having debtors abroad, or of other bankers or exchange dealers. It sends these bills to its London correspondent, say B_e, with orders for immediate discount, *i.e.* sale. The sum realized constitutes a balance abroad to the credit of the American bank, a balance upon which it then sells its own demand drafts¹ to Americans wishing to make remittances. A demand draft is sometimes sent by telegraph and is then called a "cable."² It should be noted that B_a has a balance abroad long before the bills sent abroad by it for credit have matured, since these bills it has ordered sold in the London discount market, and they have got into the possession of persons or houses which buy such bills as investments. In the United States there is no such discount market. Drafts made out in England on American debtors, after being purchased by English banks, are forwarded to American correspondent banks for collection, but are generally held, after "acceptance," for account of the forwarding English banks, until maturity, instead of being sold.

¹ Escher, *Elements of Foreign Exchange*, p. 79.

² *Ibid.*, p. 71.

It follows that, as a rule, the real creditor of an English firm on which an American has drawn a 60-day or 90-day draft is not the American, for he has had the draft discounted and has received cash or credit. Nor is it the American bank, which has had the draft sold in the London market and received a credit balance with its correspondent or has thereby liquidated a debt. It is rather the purchaser of that draft, in London, who must wait (unless he resells it) 60 or 90 days until it matures and he can collect from the debtor firm in England. Or we may go one step farther back and assert that the ultimate creditors are depositors (holders of rights to draw) in that English bank which buys the draft in question, or from which the buyer of the draft borrowed the means to buy it.¹ On the other hand, when a draft is made out by an English firm on an American, payable say 60 days after sight, the English bank which discounts it is the creditor, and, therefore, ultimately, its depositors are the creditors. For the draft will not usually be purchased by an American investor, but will be held by the correspondent bank, for account of the English bank, until maturity. The original English debtor has received payment, but for the time being this payment has come from other English capital which will only be reimbursed when the American firm pays.

As a matter of usual practice, however, long drafts are not drawn upon American debtors. The absence of a discount (or, more properly, a rediscount) market here means that importers have one less avenue of credit open to them. Were there such a market, drafts drawn upon

¹ "The enormous amount of bills held by the discount companies and bill brokers in England is to a very large extent carried by them through loans on call from the banks." Paul M. Warburg, *The Discount System in Europe*, National Monetary Commission, 1910, p. 18.

them could be rediscounted and held until maturity by whatever bank or person offered the best rate. Such a bank (and, therefore, ultimately, its depositors) or person would be the real source of credit. It is not easy to say just why we have not, in the United States, a rediscount market. Custom and prejudice may be largely to blame. In general, bankers in the United States have regarded it as evidence of financial weakness for a bank to attempt to rediscount the notes of its customers. Furthermore, the national banking law, as interpreted by the courts, has made it illegal for any national bank to "accept," for account of its customers, drafts upon it.¹ In England, banks continually accommodate their customers by thus accepting drafts. The customer is responsible, in each case, to the accepting bank, and must reimburse the latter before the draft is due, but acceptance of the draft insures it and makes it salable. The Federal Reserve Act of 1913 specifically permits banks which become members of the system thus to "accept" drafts drawn upon them,² and it empowers the Federal reserve banks to rediscount the commercial paper of member banks. The law is intended, doubtless, among other things, to further the development of a rediscount market.

§ 9

Summary

Before taking up a study of the forces determining the rate (or rates) of exchange, let us briefly restate the principal conclusions regarding exchange, already reached. First, taking up our analysis where it was left by the

¹ See Jacobs, *Bank Acceptances*, National Monetary Commission, 1910, pp. 4; 9.

² Under conditions prescribed by the law.

previous chapter, we saw that bills of exchange or drafts simply extend to trade between widely separated districts the possibilities of successive debtorship and creditorship and of debt cancellation, which in circumscribed areas are brought about through the use of checks. As in the case of checks, banks are really but intermediaries through whom and by whose arrangements, cancellation takes place. A consideration of the different varieties of method in settling obligations over long distances served to reënforce the general conclusion. These obligations are usually settled in either of two ways: first, the creditor may draw a draft upon his debtor payable to the creditor's bank or to some other designated party; second, the debtor may purchase a bank draft with which to remit to his creditor. Assuming, in trade between England and the United States, either of these methods to be used from both sides, or assuming one method from one side of the water and another from the other side, we reach alike the same result. The use of drafts and the intermediation of banks make possible an international network of credit relations which could not otherwise exist. The usual practice is for American creditors to draw on their English debtors and for American debtors to remit to their English creditors.

When the various ways of settling obligations through the use of bills of exchange had been set forth, we were ready to inquire of what, in any country, the supply of drafts upon another country is made up. We found it to be composed of two classes of drafts: those drawn by the creditors of the first country upon their debtors in the second, offered for sale to exchange bankers; and those made out by banks in the first country upon their correspondent banks in the second, sold to debtors in the

first country who desire to make remittances to the second. Demand for drafts, also, proved to have a two-fold source, springing, on the one hand, from debtors desiring bank drafts for remittance and, on the other, from banks desiring commercial or bank drafts to settle with or maintain balances in, correspondent banks. Analysis of the relations involved made it clear that supply in one country (or territory) of drafts upon a second, brings about demand in the second for drafts on the first.

The exchange market was briefly described and it was shown how exchange dealers make a profit from their transactions, being able to buy exchange somewhat more cheaply and sell it at somewhat higher rates, than merchants, manufacturers, etc. Next, bills of exchange were classified as sight drafts and long bills, according to the time to elapse before payment, and as documentary bills and clean bills, according as documents, such as a bill of lading, do or do not secure them; and documentary bills, other than those payable at sight, were in turn subdivided into acceptance bills and payment bills according to what conditions the drawee must fulfill to secure goods consigned to him.

Finally, the process of selling demand drafts against remittances of long bills was briefly described. It was pointed out that this can be done by American banks by sending drafts on English firms to England for discount; but that in the absence of a rediscount market here, the reciprocal operation is unusual. Instead, long drafts on American firms, in those relatively infrequent cases when they are drawn, are generally held till maturity for account of the remitting London banks. The comparatively large discounting, in England, of bills

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drawn by Americans on their English debtors, means that the capital which enables the Americans to get immediate funds, comes largely from those other Englishmen or English banks, who buy these bills in the discount market, or from the depositors of the banks where the funds for purchasing the drafts are secured.

CHAPTER IV

THE RATE OF EXCHANGE

§ 1

The Meaning of Par of Exchange

BILLS of exchange or drafts are certificates of property rights, *i.e.* they certify rights to payment and, therefore, rights to enjoy the benefits of various amounts of wealth. These rights, like other property, are subjects of purchase and sale, and have a price in any market where they are bought and sold. Also, the ruling price, at any time, of drafts, like the price of other goods, is fixed by supply and demand.

Exchange between countries may be said to be at par when a demand draft on either country sells in the other for the equivalent in coin of its face value, plus or minus only the insignificant expense of banking service.¹ For instance, the mint par between England and the United States is £1 = \$4.8665. This means that the material (gold 11/12 fine) in an English pound sterling of full weight, is just equal in value, supposing both to be in the same place, to the material which would be contained in \$4.8665 of gold coinage (9/10 fine) of the United States. Exchange, therefore, would be at par between England and the United States if a demand draft on London for £100 was worth, in New York,

¹For a bank might be purchasing good commercial sight drafts for very slightly less and selling its own drafts for very slightly more.

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\$486.65. In domestic exchange, say between New York and Chicago, par of exchange is \$1 = \$1, for the standard of value is in both places exactly the same.

The rate of exchange, however, may go above or fall below par. Sight or demand drafts for the same amount may realize different sums on different dates. Our problem is to explain, by a study of supply and demand, why the rate of exchange, *e.g.* between England and the United States, ever varies from par, and why it is fluctuating rather than steady.

§ 2

The Supply of and the Demand for Bills of Exchange

At the beginning of our discussion on the rate of exchange, it is important to get clearly in mind the meaning, in this connection, of the terms "supply" and "demand." In talking about other goods, *e.g.* wheat, we insist that "supply" means supply *at a price*, and that "demand," likewise, means demand *at a price*. Adopting, here, an analogous sense, we may say that the supply, in the United States, at a given price or rate and for any given period, of drafts on England, is the total of those drafts which sellers would part with, at that price or rate. The supply of bills tends to increase as the price or rate rises and to decrease as the rate falls.¹ On the other hand, the demand, in the United States, at a given price or rate and during any given period, for drafts drawn upon English firms, is the total of such drafts which buyers of drafts stand ready to purchase at that price. The demand for drafts tends to rise as the price or rate falls and to fall as the rate rises.² As, in

¹ See §§ 4, 5 of this Chapter (IV of Part I), §§ 1, 3 of Ch. V (Part I), § 9 of Ch. VI (Part I).

² *Ibid.*

the United States, we have a supply of and a demand for bills of exchange on England, so, in England, there is a supply of and a demand for such bills on the United States. Since the rate of foreign exchange is fixed by supply and demand, at the point, of course, where supply and demand are equal, we have next to determine what forces affect supply and what forces affect demand, and how these forces operate.

The supply, in this country, of drafts upon any foreign country or upon all foreign countries together, is determined by obligations, agreements or desire of foreigners to make payments to us.¹ This is obviously the case with commercial drafts drawn on foreign purchasers of American goods. These drafts come into our exchange market because foreign debtors are under business obligations to the makers of the drafts. But it is no less true of bank drafts drawn to accommodate American debtors wishing to remit. The bank draft is drawn upon a foreign bank which is, or which puts itself, under obligation to pay to the American bank's order. A draft drawn on a foreign bank wishing to lend here for profit, is determined by desire of the foreign bank so to invest. All drafts, therefore, offered for sale in our market, are based on the necessity which foreigners are under or their desire to make payments to some of us.

Conversely, the *demand* here for drafts on foreign countries, is determined by our obligations to them and by our occasion to make voluntary payments to them. This demand, as we have seen,² has a twofold source. It comes from business houses, etc., which wish to buy bank drafts for remitting to their creditors and other

¹ See, however, paragraph after next.

² Chapter III (of Part I), §§ 4, 5.

persons abroad; and it comes from American banks which wish to buy commercial drafts for remitting to their correspondents. These American banks have occasion to remit, largely to maintain foreign balances on which to sell their own drafts, but partly because English firms have drawn upon American debtors and settlement must be made through American banks to which the drafts on Americans have been sent for collection. These American banks will, therefore, wish to buy drafts on England in order to remit. The more usual practice, as we have seen,¹ is for our English creditors to await remittances by their American debtors, in drafts on London.

So far as foreign debtors choose to settle by remitting drafts on American banks, obligations from abroad to us do not increase the supply, here, of drafts on foreign countries. But the effect on the rate of exchange is the same, for our banks, by honoring these drafts, in so far as are relieved from the necessity of buying drafts on foreign countries to keep square with their foreign correspondent banks. In other words, there is a decrease, here, of demand for drafts on foreign countries, instead of an increase of supply. But the rate of exchange is affected in the same way and to the same extent in either case.

The supply, here, of drafts on foreign countries, may be said to depend, chiefly, on the following sources of obligation and voluntary payments from them to us, though some of the obligations are more likely to be settled by remittance and therefore to increase demand abroad for drafts on the United States and decrease demand here for drafts on foreign countries, rather than

¹ Chapter III (of Part I), § 5.

to increase supply here of drafts on foreign countries. The items in group 5 are perhaps most likely to be settled by remittances. Following are the groups :

1. Purchase, abroad, of American merchandise.
2. Purchase by foreigners, from Americans, of transportation, banking, insurance, and other services.
3. Purchase, abroad, of American securities, and repurchase or redemption of foreign securities held here.
4. Agreements by which foreigners make short time loans to Americans, and (which amounts to the same thing)¹ agreements by which our bankers may draw finance bills on foreign banks ; repayment of such short time borrowing done by foreign banks from American banks.
5. Payment of interest, dividends, rent, etc., on American investments abroad, remittances to Europeans travelling in the United States, etc.

On the other hand, the demand, here, for drafts on foreign countries, depends in the main on corresponding sources of obligation and voluntary payments, as follows :

1. Purchase, by Americans, of merchandise from foreign countries.
2. Purchase, by Americans from foreigners, of transportation, banking, insurance, and other services.
3. Purchase, by Americans, of foreign securities, and repurchase or redemption of American securities.
4. To make short time loans abroad, to repay short time loans from abroad and (which is fundamentally the same thing) to repay obligations incurred by American banks which have drawn finance bills on foreign banks.

¹ See §§ 4, 5 of this Chapter (IV of Part I).

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5. Payment of interest, dividends, rent, etc., to foreigners who have invested money here, remittances to Americans travelling abroad, remittances to families abroad of immigrants living here, etc.

Though the lists above given correspond, it must not be assumed that the payments in one direction under any particular item are the equivalent of the payments under the same item in the other direction. In many cases the difference is very great. Thus, practically nothing is paid by foreigners to Americans for the transportation of goods, unless we include in this item the transportation in the United States itself, of goods eventually to be shipped abroad. But Americans pay, every year, millions of dollars to Englishmen for the transportation services of Great Britain's merchant marine. Similarly, the balance of payments for banking services would be against the United States, since London is the principal banking center of the world. Again, remittances by immigrants in the United States to their families in Europe would not be balanced by payments of any similar nature made by Europeans to people here. Contrariwise, payments by Europeans to Americans for merchandise might be considerably in excess of similarly caused payments in the opposite direction.

Since the United States is still, in large part, an agricultural country, its exports tend to be periodic rather than uniform. The largest exports from the United States are in the fall after the crops have been harvested. But the things we buy flow to us in a more steady stream. Hence there is, in the fall, a relatively large supply of drafts on foreign countries, for sale in the United States, and a comparatively low price for them or low rate of

exchange.¹ Banks can then purchase these bills more cheaply as a rule than at other times, and will therefore be able to sell their own demand drafts at lower rates.

§ 3

The Effect on the Exchange Market of any Country of Disturbed Political or Industrial Conditions in That Country and in Other Countries

Investments for long periods, nowadays, take place largely through the purchase of stocks and bonds, though also through the purchase of real estate, the loaning to individuals on mortgage security, etc. The buyer of a bond is a lender to the government or company whose bond he buys. The buyer of stock has a right to residual gains. ~~The entire western European world is now a possible market for American securities, whether these securities represent public or corporate indebtedness or rights to corporate profits.~~ To some extent, the United States furnishes a market for European securities, ~~but to a far less extent.~~ Europeans have, in the past, invested more here than Americans have invested in Europe. The English people, for instance,

¹ The truth of this statement is evidenced by statistics compiled by one of my students, Mr. Lawrence M. Marks, Yale 1914, from successive volumes of the *Commercial and Financial Chronicle*. Taking the highest and lowest quotations for each month, of exchange on London, and averaging all the Januaries, all the Februaries, etc., for the years 1906-1910 inclusive, Mr. Marks arrived at the following results:

January	4.872	July	4.872
February	4.875	August	4.8685
March	4.8725	September	4.866
April	4.8715	October	4.8665
May	4.875	November	4.8695
June	4.876	December	4.869

Cf. also Clare, *The A. B. C. of the Foreign Exchanges*, London (Macmillan), 1893, pp. 135, 136.

have been large accumulators, and so have forced the rate of interest in England down to a comparatively low level. Here, the rate of interest has been higher. Consequently, Englishmen have made large purchases of American securities. And, to a considerable extent, they still hold these securities, despite the tendency during the last few decades for American industry to be financed in greater degree by American capital.

Largely because of foreign interest in American securities, the exchange market may sometimes be much affected by American financial troubles. If, for a while, prosperity threatens to forsake us, many foreign holders of our corporate securities may become alarmed and endeavor to dispose of their holdings even at sacrifice quotations. American capitalists may therefore be induced, to some extent, to buy these securities back again. So far as this effect is realized, there is a tendency for the rate of exchange on other countries, *i.e.* the price of drafts on these countries, to rise. For it puts American investors under obligation to remit to those from whom securities have been purchased; or, if the foreign sellers have drawn drafts upon America, then American banks must purchase drafts on foreign countries in order to settle with their correspondents. In either case, the demand, here, for drafts on other countries rises.

If, on the other hand, investments which Americans may have in other countries, *e.g.* in Mexico or in certain of the South American republics, seem to be rendered unsafe because of threatened political disturbance or open revolution, then the endeavor of Americans to dispose of such investments will tend to increase the supply of drafts on such countries and so may lower the rate at which these drafts sell.

§ 4

Analysis of the Relations Involved in, and Explanation of the Results of, Short Time Loans Made Ostensibly by Foreign Banks, through the Intermediation of the Exchange Market

One of the sources given in our lists, of the supply in one country of drafts on another or others, is short time "loans" (e.g. 60 or 90 days) by banks. Some of the banks in one country may choose to "lend"¹ in another country.² Let us suppose that a London bank, B_l, wishes to "lend," in the United States, the sum of \$50,000. It would cable its New York correspondent, B_a, to draw on it a draft payable in perhaps 90 days after sight. This draft could be sold in New York to another exchange dealer or banker, and the sum realized loaned, for account of the London bank, to an American firm or business man.

The loan made may be a so-called "sterling" (likewise mark or franc) loan, or it may be a "currency" loan.³ In the case of the sterling loan, it is agreed that the foreign bank shall receive a definite commission or payment from the borrower, for allowing him to raise money by a draft upon it. If the loan is a sterling loan, the borrower (the American business house getting the use of the funds) takes the risk of fluctuation in the rate of exchange during the life of the loan. The American bank, B_a, draws a draft on B_l payable to the American borrower. This draft is for so many pounds sterling. Hence the arrangement is called a "sterling" loan.

¹ Who is the real lender will appear later in this section.

² See descriptive discussion in Escher, *Elements of Foreign Exchange*, New York (The Bankers Publishing Co.), 1911, pp. 85, 86.

³ *Ibid.*, p. 87.

The borrower, to whom the draft is given, gets his money or his bank credit by disposing of the draft at the best price he can get. When the 90 days are up, it devolves upon him to purchase a demand draft, payable to the lending bank, B_e , and turn it over to B_e for remittance. The lending bank must honor, at the end of the 90 days, the draft drawn on it by B_a , for this will have reached London, and payment will be due 90 days after presentation. But B_e will by that time have received the bank draft purchased by the borrower, and so will be able to pay without any drain on its resources. It has gone through the form of lending while not parting with a single pound. It has only taken upon itself the obligation to pay, 90 days after sight, a sum which it was practically certain to receive (although there was, of course, some risk) equally soon from the American borrower.

The "currency" loan is different only in the formal arrangements. It serves the same purpose. B_a does not, in this case, hand over the draft on B_e , for the borrower to sell, but itself sells the draft to another bank or dealer. It then gives the borrower cash or credit in terms of American currency. That is why it is called a currency loan. The borrower gets dollars, not a claim to pounds sterling requiring to be converted into dollars. When the time comes for repayment, the borrower settles with B_a and B_a settles with B_e . The borrower pays an agreed rate of interest. The lending bank, B_e , is subject to a risk of fluctuation in the rate of exchange. If this bank foresees a probability that exchange will fluctuate favorably to it, then it will prefer to make the currency loan; if unfavorably, it will prefer to make the sterling loan.

We have seen that the so-called lending bank, B_e , is at no time out actual funds by virtue of its transaction. It lends only in name. Yet the American borrower gets funds in the form of cash or bank account, and eventually buys goods with these funds. Somewhere there is a real lender, an ultimate creditor. Who and where is he? The answer is: he is the man or firm who buys the draft when it is offered for sale in the London discount market, or the depositors of the bank from which this man or firm borrowed the means to buy. For the draft on B_e , having been sold in the United States to an exchange dealer or bank, would be sent by the American bank to its correspondent bank in London, and by the latter sold to whoever cared to invest in it. This English investor it is, or the depositors of a bank from which he borrows, who gives up early income for later. He (or they) is giving up present goods for future goods. He is the one, or these depositors are the ones, because of whose accumulations the whole transaction is possible. The American business man borrower gets, if not cash, a bank account, just as if he borrowed it from B_a , and with this bank account he buys goods. But instead of being indebted to B_a and through B_a to its depositors,¹ he is indebted, in the case of the sterling loan, to B_e , through B_e to the English purchaser of the draft, and through him to the depositors in any bank from which he gets the means to purchase; in the case of the currency loan, to B_a , through B_a to B_e , through B_e to the English purchasers of the draft, and finally to depositors in this purchaser's bank. The English bank is but a nominal lender. The English (or other) purchaser of the draft in the London discount market,

¹ See Ch. II (of Part I), § 3.

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and, in the last analysis, the depositors in his bank, are the real lenders. In Chapter II we saw that commercial banking combines and coördinates sporadic convenience waiting so as to make available to borrowers in the form of loans, a considerable amount of this waiting, waiting which would in any case be done because of convenience, and which, except for commercial banking, would be of no use to borrowers. Here we see that the sporadic waiting done by bank depositors in one country, may be the means of providing borrowers in another country, with funds. As is to be expected, the waiting or ultimate lending, in the case of these drafts, is done more largely abroad, and the borrowing so made possible is done more largely by Americans.

Foreign loans of the kinds we have been describing, *i.e.* sterling and currency loans, may, if most largely made in the spring and early summer, help to tide over the periods of the year when the United States has a surplus of payments to make abroad, so that these payments need not be so large. Instead of our sending large amounts of specie abroad, English purchasers, in the London discount market, of drafts drawn upon "lending" London banks, and, through these purchasers, depositors in English banks, may become temporarily our creditors. They lend to us by providing, for a time, the capital to liquidate obligations from us to English manufacturers and merchants, obligations for which, if we could not get temporary credit, specie would have to flow. Then when the crop season comes and the pressure of obligations is more markedly the other way, we pay the holders of these drafts by transferring to them part of our claims upon purchasers of our exports. Instead of money flowing, first from here to England, for

example, and then, in the fall, from England back to us, less will have gone either way.¹ During the winter, spring, and early summer, our net indebtedness abroad would perhaps have required considerable gold shipments. But any drafts drawn during this period upon English banks, nominally lending banks, are available for purchase by American exchange bankers who must make remittances abroad. The shipment of gold abroad is thus avoided. Then in the fall when we are selling considerable amounts of grain and other products and drafts on England are low in price, and when large imports of gold might result, in payment for our exports of wheat, cotton, etc., these imports of gold are made less by the fact that those Americans who have received the temporary loans (or, in the case of currency loans, the banks which act for them) have now to liquidate their obligations by purchasing drafts on London.

The comparatively high rates of exchange on England during the seasons when we are exporting less than we are importing, and the comparatively low rates in the fall, tend to make these dealings worth while. Those who thus borrow during our surplus importing season, e.g. late spring or early summer, sell their drafts at a relatively high price and buy later for remitting, if in the fall, at a lower price. The London bank which engages in the operation will intend to receive its share of the gain resulting from this situation; at least in the case of the currency loan, as we have seen,² it clearly gets the benefit of a favorable movement in the rate of exchange on London; and we should therefore expect

¹ Cf. Goschen, *The Theory of the Foreign Exchanges*, third edition, London (Effingham Wilson), 1896, pp. 38-41.

² See description at beginning of this section.

it, other things equal, to engage most gladly in the lending operation described, at the very times when its doing so would avoid, or decrease in amount, successive and opposite shipments of gold.

§ 5

Finance Bills, What they Are, Whose Accumulations Make them Possible and What are their Results

The case of a finance bill ¹ is not greatly different from that of a bill drawn on a foreign bank which expresses a desire to lend. There is, indeed, a difference, but it is superficial rather than fundamental. In the case of the bill drawn on a foreign lending bank, the foreign bank is lending as an investment for its own profit. In the case of the finance bill, the drawing is done for the convenience and profit of the drawing bank, in our illustration the American bank. In this case, the English bank does not request the American bank to draw on it to the end that the English bank can profit by so-called lending. On the contrary, the American bank gets the *permission* of the English bank to draw a draft on the latter. For in the case of the finance bill the English bank is under no obligation to the American bank. The latter, therefore, has no right to draw a draft on the former except by permission. Arrangement is accordingly made between the banks. The American bank, B_a, is given the right to draw on the English bank, B_e, in return for a fee or commission. B_a then draws on B_e, sells the draft in the market, and, for the time being, e.g. 90 days, has the use of so much extra currency.

¹ Escher, *Elements of Foreign Exchange*, pp. 94-98, gives a brief description of the finance bill.

B_e 's credit is good enough so that B_e is willing to "accept" the draft or drafts, in confidence that when the 90 days after sight are up, and payment is demanded, it will already have received remittance from B_a . It will at no time be out any money. The finance bill is therefore not greatly unlike the class of bills previously described, drawn on foreign lending banks.

As in the case of the lending operation, so in the case of the finance bill above discussed, some American (or Americans), is borrowing from abroad. In the case of the finance bill, the borrower is the American bank which gets the 90-day control of currency, and, through the bank, any person or persons who are thus enabled to borrow from it. Here, as before, the real lender is the person, or firm, in England, who purchases the draft in London, whither it has been sent for sale in the discount market, and through him the depositors in the English bank or banks, whose convenience waiting gave him the means to invest in the draft. B_a owes B_e , but B_e owes this holder of its draft, and he, in turn, is indebted, through a bank as intermediary, to the depositors of that bank, whose convenience waiting provided him with the means of purchase.

Like the short-term loan operation, the finance bill — also really a loan from abroad — may serve to tide over a period of surplus imports, so that gold need not so largely be shipped out at one season of the year only to be shipped back again in a couple of months. If, in the spring and early summer, when we are perhaps importing largely and exporting less, and have, therefore, a surplus indebtedness, our banks are allowed to draw finance bills, these drafts come into the market and are available for use in paying off part of the balance

of obligations. We therefore pay previous obligations by making new ones. Considered as a nation, we postpone payment; for what one group of persons pays, another group has borrowed. Then, in the fall, when there would otherwise be a balance of obligations from others to us, this balance is diminished by our postponed obligations to them. Not only, then, are there smaller shipments of gold abroad in the earlier period, but also there are smaller return shipments at the later.¹

It needs, however, to be demonstrated that finance bills will most probably be drawn by American banks at those times when we have a balance of obligations to meet, thus relieving the pressure, and serving, as above suggested, to obviate the necessity of gold shipments. The theory of individualism, as distinguished from socialism, is, that in serving their own interest, men are, in their economic activities (except where certain unfair methods of business are improperly permitted, or certain classes of wealth or income not really earned are unwisely secured to individuals), serving the public interest. Let us see how the individualistic philosophy applies in this case. In that part of the year when the United States owes largely, the price in the United States of exchange on foreign countries, is high. It pays B_a , therefore, to draw finance bills, and sell them at this high price.² On the other hand, the excess of obligations towards us in the fall, and the consequent excess of drafts on foreign debtors, for sale here, makes the price of these drafts at that time low. B_a can therefore buy drafts to repay, at a low price. If necessary,

¹ Goschen, *The Theory of the Foreign Exchanges*, pp. 38-41; also Bastable, *The Theory of International Trade*, fourth edition, London (Macmillan), 1903, p. 78.

² Or itself forward them for discount and credit abroad.

the loan can be renewed by the drawing of a new draft to replace the old, in cases where it is some time before the rate falls. B_a therefore profits, besides the interest which can be earned during the time it can invest or loan the amount, by the difference between the price of the drafts at one time and another, minus, of course, B_a's commission. Such drafts are, therefore, other things being equal, most likely to be drawn by profit-seeking banks at the very times when they will serve the purpose of avoiding gold shipments.¹

§ 6

How a Bank in One Country and a Bank in Another May, through the Aid of the Exchange Market, Invest in One of the Countries for Joint Account, without Either Bank Using its Own Funds

Another variety of this species of draft is that sometimes drawn when an American and a foreign bank invest here on joint account.² B_a may see that it can purchase certain securities cheaply at the time, securities which can probably be sold, later, at a substantial profit. But B_a has use for all the funds under its own immediate control, and does not wish to invest any of these funds in such securities. It suggests, therefore, to its English correspondent, B_e, that both go into this investment, on joint account, securing the means through the use of exchange. B_a then draws on B_e a draft maturing in say 90 days after sight, which is sold in New York. With the proceeds the securities are purchased and held

¹ Cf. Clare, *The A.B.C. of the Foreign Exchanges*, 1893, p. 86; also Escher, *Elements of Foreign Exchange*, p. 97, and Margraff, *International Exchange*, Chicago (The Fergus Printing Co.), 1903, p. 39.

² Process described in Escher, *Elements of Foreign Exchange*, pp. 133-135.

for 90 days or perhaps a less period. They are then sold, presumably at a profit, and remittance is made to B_a. The draft on B_a was purchased in New York, sent to London, and sold in the London discount market. By the time the purchaser presents it to B_a for payment, B_a has remitted. Neither bank has sacrificed the use of its own funds. As in the other cases, the capital is really furnished, in the last analysis, by the purchaser, in the London discount market, who has bought the draft, or, in all probability, by the depositors of a bank from which the purchaser borrowed the means to make the investment. Thus it is that an American and an English bank can invest here, for joint account, in securities, without either of them providing the means. The capital is really put up by an Englishman or Englishmen, but not by the English bank on which the bill is drawn. As in the case of lending by a foreign bank and the case of the finance bill, so here, there would be some additional stimulus, other things equal, to the drawing of such drafts on foreign banks at those times of the year when drawing them would decrease the shipments of gold.

§ 7

Analysis of the Relations Involved in a Letter of Credit

The exportation and the importation of goods may often be greatly facilitated by so-called letters of credit.¹ These letters of credit make possible the drawing of bills of exchange on other parties than the actual debtors, and at times such an arrangement is very helpful. As above suggested, this form of commercial credit may be used to further either import or export trade. Since

¹ Described by Escher, *Elements of Foreign Exchange*, pp. 143-160.

it will facilitate importation and since exportation by us is importation by some other country, it must facilitate exportation also.

The use of a letter of credit is as follows. A man importing goods, say from South Africa into the United States, desires to get possession of them at once, but is not in a position to pay for them until he can himself dispose of them for currency. He cannot, therefore, pay for them by remitting a bank draft. On the other hand, the South African exporter desires to receive his pay immediately. The American importer goes to his bank, say B_a , and asks for a letter of credit. If the circumstances warrant it, B_a issues such a letter, which is in the form of a request on B_e , the London correspondent of B_a , to accept, up to a given amount and under specified conditions, the drafts of the South African exporter. The London bank is informed that such a request on it has been issued to the importer. The American importer sends this letter to South Africa, and the exporter there is then in a position to draw a draft on the London bank, B_e , instead of on the American importer or his bank, B_a . If the draft is drawn for 90 days after sight, the American importer has that length of time to settle. The goods are billed to his bank, B_a , which issued the letter of credit; and the bank will probably let him take over the goods upon his signing a trust receipt securing the bank. The draft drawn in South Africa is sent to London, presented, "accepted," and sold in the discount market. The bill of lading and insurance certificate were attached to the draft to begin with, but when the latter is "accepted" the London bank detaches all documents and sends them to the New York bank so that the goods may be

secured upon arrival. By the time the draft is due, the American importer has paid his bank and it has settled with the London bank. This then is another illustration of borrowing by a business man or business men in the United States, the real lender or creditor being the purchaser of the draft, in the London discount market, and through him the depositors in some English bank.

One of the chief reasons, in fact, for the use of a letter of credit, is to enable the exporter to draw on London or some other well-known banking centre. His draft will then bring the highest possible price. London, as the principal banking and exchange centre of the world and a great exchange discount market, is most frequently the place drawn on. The exporter can get immediate payment¹ and the importer can get credit.

§ 8

Place Speculation or Arbitraging in Exchange

Just as there may be place speculation and time speculation in the case of commodities, so both of these types of speculation, or something analogous to them, exist in the case of drafts. Corn may be sent from a place where it is relatively cheap to a place where it is relatively dear. This is arbitraging in corn. Similarly there is arbitraging in exchange.² Arbitraging in exchange involves the purchase of drafts on one place and the sale of drafts on another. Thus, if in New York exchange on London is high while exchange on Paris is

¹ If the letter of credit is "confirmed" by the bank made drawee, then payment is absolutely guaranteed to the exporter, even before his bill is "accepted." See Margraff, *International Exchange*, Chicago (Fergus Printing Co.), 1903, pp. 88, 89.

² Described in Escher, *Elements of Foreign Exchange*, pp. 98-101.

low; and if in Paris, exchange on London is fairly low, an arbitrating transaction would be profitable. The arbitrageur in New York would buy exchange on Paris, would instruct his Paris correspondent to buy exchange on London, and would then be able to sell in New York, exchange on London. Thus the cheaper exchange on London, available in Paris, is shifted to New York. Exchange on London is sold from Paris where it is cheap, to New York where it is dear. This activity by arbitrageurs, of course, tends to limit the variations in price at different places, of exchange on any one point. It is seldom possible to make a very considerable per cent gain by such transactions.

§ 9

Time Speculation in Exchange

Besides arbitrating or place speculation, there is also time speculation in exchange. As with produce, *e.g.* wheat, this speculation in time may be speculative holding, buying and selling of futures, and (a part of future selling) selling short. Suppose a New York bank to purchase bills of exchange on London and to send them over for discount (*i.e.* sale), either for immediate discount or for discount as occasion requires. The New York bank is then accumulating in England a basis for its own drafts.¹ If, at the time, bills of exchange on England are purchasable at a low price, the New York bank will be more likely to buy, and later, when exchange is higher, it will be under greater temptation to sell. If the New York bank buys exchange when the

¹ Cf. Clare, *The A.B.C. of the Foreign Exchanges*, p. 87; and Escher, *Elements of Foreign Exchange*, p. 30.

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rate is low, then its buying tends to keep up the rate, and when it later sells, at relatively high prices, its selling tends to keep the rate down. This kind of transaction, therefore, acts on the exchange market just as speculative holding of wheat acts on the wheat market, namely in the direction of equalization. Such speculative holding of exchange, in so far as it exists, serves to decrease the alternate import and export of gold. When exchange here, on England, is low because of the excess of obligations from them to us, a part of this excess of obligations may take the form of available credit for American banks with English banks. So much, therefore, of the excess of obligations, need not be settled by the shipment of gold. Later, when gold tends to flow from the United States to England, this accumulated credit in England obviates the necessity of so great a flow of gold as would else occur. We may say that, since part of the money which was collectible by American banks (though perhaps collectible only through the London discount market), is allowed to remain as a credit in England, either as bank credit or as long bills not discounted but held for account of American banks,¹ the later obligations to England are paid partly by drawing on that credit instead of shipping gold.

There is also the buying and selling of futures in exchange. To illustrate, an exporter may know long in advance that he is to ship goods of a certain value at a given time. He will then be able to draw a draft on the purchaser of these goods. But if he waits until he has sold the goods before making any arrangements regarding his draft, he simply takes the risk of selling

¹ For further explanation of the nature and method of these transactions, see Ch. VI (of Part I), § 2.

the draft on his debtor for whatever is the ruling price at the time of the sale. He can, however, contract ahead for the disposal of his draft to some exchange dealer or banker, at an agreed price.¹ He is selling or agreeing to sell future exchange.

Sometimes a bank remits drafts to its foreign correspondent, some of which, being payment bills, cannot be immediately discounted for cash.² These bills will, of course, with few if any exceptions, eventually be paid; and if there are very many of them, then the remitting bank can estimate, because of the constancy of averages, at about what dates they will be paid. This bank is therefore in a position to promise that it will sell demand drafts on its correspondent abroad, at given dates and for given amounts. It promises to sell these drafts at some future time when it can be sure of having the balance abroad on which to draw.³ In this case the future selling is done by a bank. By making such an arrangement, the bank guards itself against the risk of unfavorable exchange rate fluctuations. By selling futures against futures a bank can relieve itself entirely from risk of such fluctuations. The bank buys or contracts to buy, an exporter's future bills, and at the same time sells or contracts to sell, its own.

As in other dealing, so in foreign exchange, one kind of "future" selling is selling "short." To sell "short" is to agree to sell at a future time, without having, at the time of making the agreement, the means to deliver, but relying upon later purchases to "cover" the shortage. A man sells wheat short if he contracts, say in March,

¹ See Escher, *Elements of Foreign Exchange*, p. 35.

² See Ch. III (of Part I), § 7.

³ Escher, *Elements of Foreign Exchange*, p. 101.

to sell for May delivery, counting on his ability to purchase the wheat in May, in order to make good the agreement. Similarly an exchange dealer sells short if he agrees to sell a draft, *e.g.* in June for August delivery, but has, when the contract is made, no bank balance abroad or salable drafts held in his name in some foreign bank, on which he may draw. He relies upon August purchases of bills to provide this foreign balance. The same in principle as short selling is the finance bill already described, and other similar bills. In the case of the finance bill, one bank does not merely promise to sell at a future time; it actually does sell, in the present, a draft on another bank where it has at the time no credit balance and no deposit of discountable bills. This draft, though sold in the present, is of course for future payment. It is a draft for 60 or 90 days or for some other period. It requires to be "covered" before maturity. Hence it may properly be classed with or alongside of other short selling.

§ 10

Summary

The starting point of our discussion of the rate of exchange has been supply and demand. At any given time the price, say in New York, of drafts on London, *i.e.* the rate of exchange on London, is fixed where supply of and demand for such exchange are equal. Thus, exchange may go above or below par, the mint equivalent in coinage.

Going back of supply and demand, we found that these depend upon purchases and sales, investments, interest and dividends, etc. Whatever tends to increase

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the total payments to be made by Americans to Englishmen tends to increase the demand here for drafts on England. *Vice versa*, whatever increases the total payments to be made from them to us increases the supply here of drafts on England (or decreases the demand).

Analysis of the short time loan by a foreign bank, of the so-called finance bill, and of investment here by an American and a foreign bank for joint account, led to the conclusion that in all cases the borrower was the business firm here which profited by the loan, while the ultimate lender was the person in the London or other discount market who bought the bill and held it till maturity, or the depositors of the bank from which such a buyer obtained the means of purchase. In the case of some of these bills, most of all, perhaps, the finance bill, there is probably a tendency for more to be sold, other things equal, at those times of year when gold must otherwise be more largely exported; and to be redeemed, later, when gold must otherwise be more largely imported. The letter of credit is a scheme to get immediate payment for an exporter, a period of credit for an importer, and a chance for the exporter to make out a draft on an important financial centre and therefore a more salable draft than he might else have. As with the finance bill, short time loan, etc., the credit is really furnished by investors or by bank depositors in the discount market of the big banking centre, most likely London, where the draft is sold.

Exchange is speculated in, much as are wheat, corn, stocks, etc. There may be arbitraging in exchange, *i.e.* sending exchange on some point, from where it is relatively cheap to where it is relatively dear. Exchange

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may be, in a sense, held for a rise, thus tending to steady the exchange market and decrease the flow of specie; it is subject to "future" dealings; it is sold "short." The finance bill is really, in principle, a kind of short selling of exchange. An agreement to sell at some future date, relying upon purchases of exchange in the meanwhile, to cover, is clearly selling short.

CHAPTER V

THE RATE OF EXCHANGE AND THE FLOW OF SPECIE

§ 1

The Upper Limit to Fluctuation of the Rate of Exchange, Determined by the Cost of Exporting Specie

WE have seen that, by the use of finance bills and other similar arrangements, the excessive obligations of a country to other countries during any short period may be in part balanced by the reverse obligations of a later period. We have also seen that, by speculative holding (accumulation) of exchange, the surplus obligations to a country during an earlier period may be used to offset, in part, the obligations incurred by it in a later. But sometimes there will be a net balance of obligations in one direction for several months or a year or a series of years. If so, the obligations probably will not be liquidated for the most part by postponement or by exchange accumulation. The demand for bills with which to meet a long continued balance of indebtedness will hardly be satisfied by the sale of finance bills or other bills of similar nature, for the bankers of a country cannot be indefinitely adding to their obligations of this sort and not repaying. Neither will the supply of bills caused by a long continued excess of obligations to a country be taken care of by speculative purchase and holding for a rise, since there is a limit to the amount which bankers can afford to invest in such speculative holding. If, therefore, our obliga-

tions are larger for any great length of time than the obligations to us, there will be a great demand for bills of exchange with which to remit and there will be a relative scarcity of such bills. Consequently, the price of bills or the rate of exchange on other countries, which will equalize supply and demand, must maintain a fairly high average. On the other hand, if obligations to us are for a long period in excess, the rate of exchange here, on foreign countries, must be fairly low, else the supply of drafts on these countries will exceed the demand.

Are there any limits, upper and lower, to the rate exchange may reach? Are there any limits, for instance, upper and lower, to the price that drafts on London may command in New York? If there are, what forces determine these limits?

Let us consider, first, the question of an upper limit of exchange. The price in the United States, of drafts on England, will not go above par by much more than the cost of shipping specie. For if it does so, either the demand for such drafts will decrease, or the supply will increase, or both, to such an extent that supply will exceed demand. A rise of exchange above par by more than the cost of specie shipment must decrease the demand for drafts, because many of those in this country who are debtors will, if their debts are large, find it cheaper to ship specie than to buy drafts. It is true that in some cases the debts of merchants, etc., are settled by their English creditors drawing on them. But if so, the bills drawn on these Americans have to be sent to American banks for collection, and these American banks must then settle with the English banks sending the drafts. And if the rate of exchange goes above par by more than the cost of shipping gold, American banks

having large remittances to make will prefer to ship gold rather than to buy for shipment the more expensive bills of exchange. As a matter of fact, merchants, manufacturers, etc., will rarely have the facilities and knowledge or the large indebtedness to warrant their shipping gold, and will continue to send drafts. But debtor banks frequently do ship gold. We may say, then, that at a rate of exchange much farther above par than the cost of shipping specie, the demand here for drafts on England (and other foreign countries) would fall short of the supply. Therefore, such a rate could not continue.

We arrive at the same conclusion from a study of the supply side of the market. If the rate of exchange, *i.e.* the price of drafts, rises above par by more than the cost of specie shipment, then it will pay some banks, even though they owe nothing, to export gold. The gold will be exported to a consignee, say a foreign correspondent bank in London. Then the American bank can count on having a balance or drawing account in the London bank, in the same manner as if drafts had been sent. On this balance, the American bank can draw its own drafts for sale in the United States, at the high ruling rate, to persons having remittances to make. By so doing, the bank adds to the supply, here, of drafts on England, and the ordinary business man has no occasion, himself, to ship gold. So a rise in the price of drafts on England, beyond a certain point, will tend to increase the supply of such drafts. And at a price which exceeds par by much more than the cost of shipping specie, supply would almost necessarily exceed demand, because the shipment of specie on which to sell drafts would be so profitable. It follows that the rate of exchange cannot, ordinarily, be expected to exceed par by much more than the gold

shipment cost. It is kept down by forces on the supply side of the market, as well as by forces on the demand side.

We may fairly assume the cost of gold shipment between New York and London to be, for large quantities, about \$2 per £100, including charge for transportation, insurance, and all other expenses. Then, since par between New York and London is \$486.65 = £100, the price in New York of sight drafts on London could not much exceed \$488.65 = £100. So soon as it gets as high as that or higher, it becomes as cheap or cheaper for New York banks to settle their indebtedness to English banks by purchasing and shipping gold as by purchasing and shipping drafts. A draft on London for £100 would cost, if exchange were at its highest point, \$488.65 or more. But if \$486.65 in gold could be shipped to London for \$2, making a total expense of \$488.65, no New York bank, having a remittance to make, would pay a higher price for a draft. Hence the demand for drafts on England must fall. Likewise, so soon as exchange gets higher than \$488.65 = £100, it becomes profitable for New York banks to purchase gold, ship it abroad, and sell drafts drawn on the credit so secured. \$486.65 in gold plus \$2 for shipment, loss of interest, insurance, etc., makes \$488.65, total expense. The \$486.65 is worth in England, mint equivalent, £100. If a draft on the English consignee for £100 will sell for more than \$488.65, it is obviously profitable to ship gold and sell drafts. To ship drafts instead of gold might be less profitable, because of their high price. Because of gold shipments, the supply of drafts on England must be greater.

The cost of gold shipment, however, may, under the

pressure of special circumstances, go far above \$2 per £100; and this cost is, therefore, a somewhat elastic rather than a definitely rigid limit to the possible rise of exchange. For example, the prospect of a great European war caused insurance rates on gold shipments to Europe to rise as high as 1 per cent on July 30 and 31 of this year (1914).¹ Such charges, nearly \$5 per £100 for insurance alone, at a time when there was a strong movement in foreign countries to sell securities and realize gold, and when, consequently, the United States was exporting gold, made possible a rise in exchange rates much above the usual upper limit. In fact, the foreign exchange market seems to have been, in this case, completely demoralized by the suddenness of the crisis.² The immediately ensuing outbreak of war on an extended scale brought a sudden check to trade in general, including the export of gold. One vessel, the *Kronprinzessin Cecilie* of the North German Lloyd Company, which had left New York July 28 carrying over \$10,000,000 in gold and silver consigned to English and French banking houses, returned with her cargo to the United States (Bar Harbor, Me., Aug. 4) rather than risk capture.³

§ 2

Some Details Connected with the Exportation of Specie

A number of details of the gold export operation may now claim our attention. Let us consider first the loss of interest during transportation of the gold. If it takes seven days to transport the gold and if the draft drawn upon it is sold when the gold is shipped and goes abroad

¹ See *New York World*, July 31 and Aug. 1, 1914.

² *Ibid.*, July 31, 1914.

³ *New Haven Evening Register*, Aug. 4, 1914.

at about the same time, this draft can hardly be honored in less than seven days. The purchaser of the draft, therefore, must pay for it seven days before his foreign creditor can receive the money, and so must lose seven days interest. The alternative to such a purchase would be to wait seven days and buy a cable. If he buys the banker's draft on the gold he will, presumably, pay very slightly less for it in consequence of this period of waiting. Accordingly, the price received by the drawing bank is very slightly less. Any demand draft, however, other than a cable, must suffer such a deduction for interest. And demand drafts drawn when goods are shipped, on the consignees, cannot usually be cables, since the consignees cannot be expected to pay for goods before receiving them. Any exporter, then, may be said to lose interest in the same way. He ships goods which may not reach their destination for several days or weeks. If they arrive on the same steamer as his draft (which is at once shipped by the purchasing American bank), the draft may be made payable at sight. But even then there is time lost. Had the goods been sold at home, this loss need not have occurred. It is one of the deductions from the benefits of trade between widely separated areas, that wealth in transit is temporarily kept out of use. The American exporter may get more for his goods, if sold in England, than he could get at home, and the English buyer may get these goods more cheaply than if he purchased them in his own country. This gain to both parties will presumably exceed all losses, including the loss of time, incident to handling and transporting the goods. Otherwise the trade would not take place. But the cost of transportation makes the net gains considerably less than they would else be, and the loss of

time involved makes them somewhat less. The exporter of any goods, then, may be said to lose something in interest when he sells a sight draft on the consignee, though the price he receives for the goods may make the transaction well worth while. The gold exporting bank is no exception. This slight loss, however, is not ordinarily reckoned as one of the expenses of exporting gold. The banker thinks of the price his draft brings, as his receipts, and does not regard the slight reduction below what it would yield if collectible at once, as an expense. Insurance of the gold, transportation charges, etc., are deductions, along with the cost of the gold, from his gross returns, and these he regards as his expenses.

When gold is exported, it must be assayed, weighed, etc., on arrival, and, since this requires some three days, there must be subtracted interest for that time from the shipper's gross profit. If the draft drawn upon the gold is a sight draft, it may be presented and paid three days before the gold shipped can rightly be credited to the drawer. If so, there is technically an "overdraft" on which interest has to be allowed by the American gold exporting bank¹ to the English consignee bank. That is, this interest must be deducted from the balance in England on which the American bank can draw. When the American bank exports gold as the cheapest means of settling a debt, there is the same loss of time, and so, in a sense, loss of interest, during assaying, weighing, etc., as well as during transit.

Still another detail should be mentioned. In New York, or at any United States subtreasury, gold is always purchasable with dollars (*e.g.* United States notes, gold

¹ See Escher, *Elements of Foreign Exchange*, New York (The Bankers Publishing Co.), 1911, pp. 114, 115.

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certificates or silver) at the same rate or price. An ounce of pure gold is always worth \$20.671, and an ounce of gold 9/10 fine is worth \$18.604. The subtreasuries aim to have bar gold available, but if the supply is exhausted, then gold coin can be secured for export. There is no question, therefore, here, as to the cost of the gold to be shipped. But there is some variation in the amount of coin of the realm which the specie may be worth on arrival in Great Britain. This is because, while the bank of England is by law compelled to pay £3 17s. 9d. per ounce for gold, the mint equivalent of an ounce is £3 17s. 10½d. Any one can get the larger amount for his gold by waiting to have it coined. But on account of the delay and consequent loss of interest while the gold is being coined, together with the labor of weighing and assaying, the bank is not compelled to give the mint par for gold; though, to relieve others of the necessity of waiting, it is under obligation to give for it the somewhat less price stated above. The bank, however, may have sufficient use for gold, for reserve, export, or other purpose, so that it will bid the full mint price or even more. If all gold coins were full weight, the bank would never bid more than the mint price, since coined gold could be used and it would be cheaper to use coined gold for any purpose for which the gold bars (or bullion) might be desired, than to pay a higher price for the latter. The price of gold would, in that case, fluctuate between £3 17s. 9d. and £3 17s. 10½d. In fact, it may and sometimes does go slightly above the latter price, because the bank may be purchasing gold with worn coins, which, while within the legal limit of tolerance in England, would have to pass by weight if exported. The American bank which exports gold to England cannot tell, there-

fore, just what it will be worth on arrival (though doubtless some one could be found to guarantee a price). The money value on arrival will depend, slightly, on what is being offered for gold at the time.

Sometimes the export of gold involves a triangular operation.¹ For instance, B_a wishes to get a balance with B_e in England, on which to sell drafts. Drafts on England, here, are high, and B_a does not wish to buy any in such a market. But it may happen that in Paris, drafts on London are below par. The high rate in New York of drafts on Paris, however, tends to discourage arbitraging. Instead, B_a can ship gold to its Paris correspondent, B_t , and order the Paris bank to buy a draft on London. This draft is sent to London for discount, and B_a then has a balance in London, with B_e , on which it can draw at a profit above cost.

§ 3

The Lower Limit to Fluctuation of the Rate of Exchange, Determined by the Cost of Importing Specie

As the rate of exchange has an upper limit, though of course a slightly elastic one, so also it has a lower limit. If exchange falls below par by much more than the cost of importing specie, either the supply of drafts on foreign countries must decrease, or the demand for such drafts must increase, or both, to such an extent that supply exceeds demand. The supply of drafts on foreign countries would tend to decrease, because those having collectible debts abroad in any considerable quantities, on which they desired to realize, would find it cheaper to pay for the importation of specie than to sell at so great

¹ See Escher, *Elements of Foreign Exchange*, p. 120.

a discount, drafts on their foreign debtors. Suppose, for example, that exchange in New York on London were below $\$484.65 = \text{£}100$. Then any New York bank, or other person, desiring to call back funds held in London or to collect a debt from there, would prefer to pay $\$2$ per $\text{£}100$ for importation, and have $\$486.65$ minus $\$2$, or $\$484.65$ for each $\text{£}100$, than to get less than that amount by selling a draft at a very low rate of exchange. This applies, of course, only when the circumstances (or agreement) are such that the creditor is obliged to bear the risk of exchange fluctuations. Otherwise, the debtor would be expected to remit draft or specie. But whenever settlement is to be made at, in this regard, the creditor's risk (and this might be the case, for example, where a creditor bank has decided to withdraw funds which it has itself put on deposit abroad), the effect of a very low rate of exchange on any point would be to decrease the supply of drafts on that point and substitute importation of specie. With exchange so low, it would pay better for banks to withdraw their balances from abroad than to sell drafts upon those balances.

A low rate of exchange, below $\$484.65 = \text{£}100$, would also tend to increase the demand for drafts. For such a rate of exchange would make it worth while to import gold for profit. $\text{£}100$ of full weight English money would be worth, in this country, $\$486.65$. Subtracting $\$2$ as cost of transportation, insurance, etc., there is left $\$484.65$. If the gold can be purchased with a draft on an English bank, a draft which, because of the low rate of exchange, costs less than the above sum, the operation is profitable. (It is not intended to assert that the importation of so small a sum would be profitable. Rather is it here assumed that the $\text{£}100$ is only a part of a much

larger sum.) The low price of drafts, then, stimulates the demand for drafts as a means of paying for English gold. Thus, on the supply side as on the demand side, there is a limitation on the extent to which exchange can fall. The lower limit of exchange fluctuations, like the upper limit, is not, however, absolutely and permanently fixed, since the cost of shipping gold may vary, — for example, by higher insurance rates in war time. In practice, the ordinary business man does not himself import gold but takes advantage of the demand for his drafts by banks which use the drafts to pay for gold. With importation of gold from England, as with exportation to England, allowance must be made for the possible slight fluctuation in the price of gold in terms of pounds sterling.

§ 4

Circumstances which May Cause the Rate of Exchange to Fall Below what is Usually its Lower Limit

But the rate of exchange may sink considerably below what is ordinarily the gold shipping point or so-called specie point, in times of panic or of great financial disturbance accompanied by a relatively large supply of exchange.¹ The principles involved are the same at such times as always, and the factors to be considered are the same, but one of these factors, loss of time or loss of interest, comes to have exceptional importance. If, when panic conditions prevail, sellers of goods have bills on foreign purchasers, they will be anxious to realize on these bills at once. In a crisis, both cash and credit are relatively hard to get.² At the peak of the crisis, there is a so-called stringency. Interest rates are high. The sellers of

¹ See Goschen, *The Theory of the Foreign Exchanges*, London (Effingham Wilson), 1896, pp. 49-52; also Bastable, *The Theory of International Trade*, London (Macmillan), 1903, pp. 85, 86.

² See Ch. II (of Part I), § 7.

drafts do not want to lose interest and will, therefore, sell at a low price so as to get cash immediately. Especially if their creditors are pressing them hard or bank loans are difficult to get, they must make the most of every available resource, at once. Rather than wait for importation of gold, they would sell drafts at a considerable reduction below the usual price. It is the same when the creditor is a bank. If, at such a time, it has occasion to draw on a foreign balance, it will desire, like others, to get control of such resources at once, and may accept an unusually low rate of exchange rather than resort to importation. Neither will a bank, at such a time, be likely to import gold for profit unless the profit is exceptionally great. To buy gold abroad is to subject itself to a considerable wait pending the arrival of the gold, during which time part of its funds are unavailable for other business. But during a crisis a bank is least liable to desire, even temporarily, to part with funds. It will be induced to do this only by hope of an exceptional profit, only, that is, if the price of the exchange which it must use to buy foreign gold is below the usual gold importing point. Some few creditors may be in a position to secure immediate payment by cable. But those whose claims are based on the export of goods cannot expect thus to be paid in advance of the goods' arrival. Furthermore, at a time when the balance of indebtedness is from foreign countries to us (and it is such a time that we are considering), a part of that indebtedness must be settled by shipments of gold and so necessarily requires an interval of waiting while the gold is in transit. It is this necessary wait, most unwelcome at a time of stringency, which forces the rate of exchange below the usual specie point.

§ 5

The Cost of Money Shipment in Domestic Exchange

It should be noted that the principles of domestic exchange are not different from those of foreign exchange. Money has to be shipped from one part of the United States to another, as it has to be shipped between countries, and it costs something to ship it. But in domestic exchange the distances average less and the expense is smaller. The express companies will carry \$1000 from New York to Chicago for 40 cents.¹ To carry \$486.65 across the ocean, pay for insurance, weighing, assaying, etc., costs about \$2 (in large quantities), or over \$4 per \$1000, making an expense more than ten times as great.

Of course even the trifling charge of carrying money about our own country might well affect the price of drafts to that extent, and in fact it does so when banks buy and sell domestic exchange of and to each other. But in dealing with customers, it is usual for the banks to pay no attention to this expense. On the contrary, they pay to their customers when buying the latter's drafts, and charge them when selling drafts to them, a more nearly flat rate, which includes only a proper fee for bank services, reasonable interest for time elapsing before maturity, and reasonable insurance for the possibility of non-payment. The up and down fluctuations of exchange between the shipping limits are borne by the banks, and, since they gain about as much by one set of fluctuations as they lose by the reverse changes, they just about make, on the average, a fair return for their service to the community.

¹ See Taussig, *Principles of Economics*, New York (Macmillan), 1911, Vol. I, p. 466.

As a matter of fact, such a small proportion of the total business done requires shipment of actual money that the expense, considering the low cost of domestic shipments, may well be regarded as negligible. To illustrate, a New York bank might have sold \$1,000,000 of drafts on Chicago and bought \$998,000 of drafts on Chicago. It might then be necessary to ship \$2000 to Chicago at a cost of 80 cents. But this would be an expense for the entire business transacted, extremely small, and the bank might well ignore it. At any rate, such, in domestic exchange within the United States, is the custom.

§ 6

The Long Run Effect of a Balance of Payments from One Country to Another, for Commodities or Services

So far we have discussed chiefly the more immediate effects, upon the exchange market, of given conditions. Let us now consider some of the long run or ultimate effects. These depend mainly on the relative prices or levels of prices of goods in different countries. We have seen that the determination of the level of prices in any country is expressed in the equation

$$MV + M'V' = pq + p'q' + \text{etc.},$$

where M is money, M' is bank deposits, V and V' are velocities of circulation, the p 's are the prices respectively of different kinds of goods, and the q 's are the quantities of these goods. We have seen, also, that M' tends to increase or decrease in sympathy with M . We have, therefore, drawn the conclusion that if, in any country, M increases faster than the q 's, prices will rise, while if M decreases, they will fall.

Bearing in mind these facts, let us now consider the long run influences of the following sources of exchange, on the rate of exchange and on the flow of money :

- a* — Payments for commodities.
- a'* — Payments for services, *e.g.* freight, banking, etc.
- b* — Payments of funds for investments, *e.g.* international lending and investing.
- c* — Payments of interest, dividends, etc. on such investments.
- c'* — Payments from home funds to persons of one section or country, travelling in others.
- c''* — Payments to families of immigrants.

Regarding payments for commodities, it is to be noted that these are generally purchased where they can be got most cheaply. If we can buy most commodities more cheaply in England than here, then there will be a demand for exchange on England with which to pay for them, and exchange on England will rise. If such a condition (large purchases from England) lasts for any great while, the rate of exchange will probably go high enough to encourage the exportation of gold. As a consequence, since in each country there is a relation between gold bullion and money,¹ *M*, and therefore *M'* also, will increase in England and decrease here. Prices will rise there by comparison, and fall here. We shall cease to buy so much in England, and England will buy more of us. Great purchases by us of foreigners tend, therefore, to cause great purchases by foreigners of us. Money flows one way or the other because commodities are purchased, all things considered, where they are cheapest. Briefly, commodities are bought where prices are low; the rate of exchange elsewhere on these low price places

¹ See Ch. I (of Part I), § 7.

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is therefore high; gold is therefore shipped to the low price places, and, since it is in large part coined, because of the law of flow between bullion and coin, prices in those places tend to rise. Though equilibrium is ever being departed from, it is ever tending to be restored.

But this does not mean that if, for instance, wheat is cheaper in the United States than in England, and England buys wheat of us, we then, when English prices have fallen and ours have risen, begin in turn to buy wheat of England. Wheat never becomes cheaper there than here. What is more likely to happen is that, when our prices rise and theirs fall, they will buy less of our wheat than before, and either raise more themselves, buy more elsewhere, use a substitute, or simply get along with less. We, on the contrary, when prices have fallen in England and risen here, will perhaps buy more cotton cloth in England, and either make less here, buy less elsewhere than in England, substitute it for another kind of cloth, or use more cloth.

A purely superficial consideration might lead to the conclusion that we can always buy goods in England more cheaply when exchange on England is low. A lot of English goods worth £100 or, in our money, at the mint equivalent, \$486.65, might cost \$489 if exchange were high and only \$484 or some \$5 less, if exchange on England were low. But the conclusion that low exchange on England means an opportunity to buy goods there more cheaply applies with certainty only on the supposition that other things are equal. And the very fact that exchange on England is low is evidence that other things are not equal. Low exchange on England indicates, as we have seen, a large supply of drafts on England. Therefore it probably indicates that we have been selling

to England a relatively large amount and buying from England a relatively small amount of goods. The presumable cause of this situation is relatively high prices there and relatively low prices here, as compared with other times or seasons. To be specific, at the time when low exchange would enable us to buy in England £100 worth of goods for \$484, it is probable that prices in England are comparatively high and that £100 will buy less there than at other times, compared with what money will buy here. Expressing the fact in general terms, we may say that, when money has flowed from here to England in such quantities as to make their prices higher and ours lower, it pays to sell to them rather than to buy from them, even though, at such a time, exchange on England is below par. Low exchange on foreign countries does tend to stimulate importation, and high exchange to stimulate exportation, but exchange fluctuations are too narrow to be of determining influence. If, for example, Americans purchase largely in England, the necessity of remitting will make exchange on England high, and will in so far discourage further purchases from England, while encouraging sales to England and encouraging English merchants to purchase goods here. But exchange cannot rise high enough to influence, very strongly, the importation and exportation of other goods, because so slight a rise causes shipment of gold (which, because of its great value in small bulk, is inexpensive in proportion to value, to ship).¹ It is quite likely, then, that excess buying of Americans from abroad, will not be checked or give rise to corresponding purchases by foreigners from this country, until a flow of gold has changed relative price levels.

¹ Cf. Ch. VI (of Part I), § 9.

Payments for freight, banking, and other services affect exchange in the same way as do payments for commodities. For example, payments for ship transportation services are supposedly made where these services can be secured most cheaply. Thus, a maritime nation like Great Britain could sell to us the services of her ships; and the resulting flow of money towards Great Britain and higher prices there of various goods, would give rise to their purchase of such goods, *e.g.* wheat, from us. Great Britain might be said to export transportation, banking, and other services, and to import food.

Summarizing the conclusions of this section and combining them with previous conclusions, we may assert (1) that the rate of exchange in one country on another depends upon the supply of and the demand for drafts; (2) that the supply of and demand for drafts depends on the direction of obligations and other occasions for making payments between the countries; (3) that the direction of obligations, etc., depends largely upon the surplus of commodities and services purchased by one country of another; and (4) that the surplus of commodities and services purchased by one country of another depends upon the relative prices of those commodities and services in (or as sold by) the countries concerned.

§ 7

The Long Run Effect of International Investments upon the Rate of Exchange and the Flow of Money

We have next to examine the long run effect of international (or interterritorial) investments upon the rate of exchange and upon the flow of money. If, for example,

Englishmen invest in the United States, if we borrow of them or sell securities and other property to them, what is the immediate effect? It is to increase the supply, here, of drafts on England, or decrease the demand for such drafts,¹ and so to lower the rate of exchange on England; and to increase the demand in England for drafts on the United States, raising there the rate of exchange on us (though this fact is obscured by the custom of quoting the rate in England, as here, in American money). Then it becomes worth while for American banks to import and for English banks to export, gold. As a second consequence, therefore, gold flows from England to the United States. Since much of this gold, because of the laws of interflow between gold bullion and gold coin² is a subtraction from English money and an addition to American money, prices will tend to fall in England and will tend to rise in the United States. Then it will become profitable for us to buy more goods in England, while England will buy less goods of us. As a next consequence, the obligations from us to them will be in excess, and the rate of exchange on London will rise. Therefore, gold will be shipped back again in return for other goods.³ This return flow must continue until English and American prices (supposing no new influences to intervene) are in about the same relation as before the lending or investing began. That means that in each country the quantity of money must be in about the same relation as before to the quantity of goods. Speaking roughly, we may say that the invested money flows back for goods, or that what is really invested is

¹ See Ch. IV (of Part I), § 2.

² See Ch. I (of Part I), § 7.

³ See Taussig, *Principles of Economics*, pp. 468-471.

usable capital. If Englishmen invest in the securities of a new American railroad, what we really get from England may be steel rails, engines, etc., or cloth, coal, and other goods to be consumed by us while we are making the rails and engines. International lending and investing is most decidedly a lending and investing of capital wealth in such forms as are here suggested, and not merely a flow of money.

Foreign investments here may, in fact, take largely the form of usable capital, without the intermediation of these stages of inflow and outflow of money. The fall in the rate of exchange on foreign countries, consequent on such investments, itself tends to make foreign goods slightly cheaper in terms of American money and so to encourage, somewhat, importation of usable capital, even before the tendency to importation is accentuated by the change in relative price levels.¹ And if gold does flow in to some extent, the tendency for it to flow out for other goods may show itself so quickly that, aside from the first slight inflow, the purchase of capital goods abroad keeps pace with the investments made by foreigners here. In effect, the foreign investors send us, perhaps almost at once, capital other than money.

§ 8

The Long Run Effect of Various Other Payments from One Country to Another

The third group of purposes for which bills of exchange and money are sent from country to country, is to pay interest, dividends, and profits on investments, to send remittances to persons travelling abroad, and to send

¹ Cf. § 6 of this chapter (V of Part I).

remittances to the families of immigrants. We have just seen that, when foreigners invest here, such investment, in the long run, is an investment of consumable goods, or of the machinery of production, or both. In the long run, what flows here is goods rather than money. After a time, interest is earned on the bonds foreign investors have purchased, dividends are declared on the stock, etc. Having secured the use of foreign capital, we must pay interest on it. There arises then a demand for exchange on foreign countries in order to pay these investors their profits. This demand makes exchange on foreign countries high (while on us it is low), and it becomes worth while for gold to be shipped from us to them. The same kind of result occurs if and when the invested capital is itself repaid (*i.e.* if American investors buy back from foreigners American land, securities, etc.). Consequently foreign prices tend to rise and ours to fall. Therefore, foreigners buy more goods of us than previously, and the money flows, chiefly,¹ back here. In the last analysis the interest and dividends received are practically all in the form of food, raw material, manufactured goods, etc., and are not merely money.

So, in the last analysis, remittances to Americans travelling abroad and to the families of immigrants, have the same result. Our countrymen travelling abroad receive from home, in the long run, not money, but goods. Of course they may purchase chiefly European

¹ Not, perhaps, entirely, because the somewhat larger amount of goods in foreign countries, consequent on the flow back to us, for goods, of the interest and dividends money, may require a little more money to be circulated. But the rapidity of circulation of money and the fact that it is the basis for bank credit circulating even more rapidly, would seem to signify that a very large increase in the quantity of goods abroad would call for but a slight increase in money.

goods, but, if so, they thereby put some Europeans in a position to get American goods. In the long run, it is chiefly goods other than money which flow in trade.

§ 9

Summary

Though the use of bills of exchange obviates, to a large degree, the necessity of shipping money or gold, nevertheless, as we have seen, balances must be thus settled. A continuous balance of obligations in one direction will cause gold to be shipped, by affecting the rate of exchange. It will become cheaper to settle indebtedness by shipping gold, and the exportation or importation of gold may be undertaken for profit. A high rate of exchange, here, on any country, will cause shipments of gold to that country; a low rate will cause importations of gold from that country. Exportation of gold to any country will tend to keep down the price of drafts on that country by decreasing the demand for them (debts being settled by gold) and by increasing the supply of them (drafts being drawn on consignees when gold is shipped for profit). Importation of gold from any country will, analogously, tend to keep up the price of drafts on that country by decreasing the supply of drafts (gold being imported instead of drafts being drawn), and by increasing the demand for them (to purchase foreign gold imported for profit). The rate of exchange can, therefore, go above or below par by only about the cost (with perhaps a reasonable profit) of shipping specie. But at a time of stringency, when most business men in a country desire to secure funds as quickly as possible, the rate may go somewhat lower than what would usually be the gold importing point.

In the long run, specie tends to flow to those places where other desired goods are cheapest (and specie, therefore, of most value or purchasing power in comparison with those goods), and from places where goods other than money are high. So lending and investing between countries is really, in the main, a lending and investing of capital goods rather than money; for the flow of money changes the relative levels of prices of the countries concerned, and brings about a reverse flow. The same principle applies to the payments of interest and dividends, remittances to persons abroad, etc. The use of bills of exchange and money complicates these business relations of countries and territories; but it does not change the essential fact that trading, lending, investing, and profiting involve, in the last analysis, capital and consumable goods rather than money. Money (as well as bills of exchange, etc.) is a part of our machinery of production, but only a part, and it is as a part of this machinery that it is of use in international and interterritorial business relations.

CHAPTER VI

FURTHER CONSIDERATIONS REGARDING THE RATE OF EXCHANGE

§ 1

The Price of Long Drafts Determined in Part by the Rate of Interest or Discount

THE price, here, of bills of exchange on any given country, at a given time, may be regarded as being made up chiefly of two factors. These are, the rate of interest (1) or discount, and the pure rate of exchange. The pure (2) rate of exchange is the rate on demand or sight drafts. As to these there is no element of time except, of course, the time required for the carriage of the drafts from the one country to the other. Ignoring the slight interest thus involved, some $\frac{1}{60}$ of the yearly rate, we may say that the rate of exchange on sight drafts is pure exchange. It is the rate of exchange on sight drafts, which we have in mind when we say that exchange can ordinarily fluctuate only between the specie points or shipping limits.

But with other drafts, the rate of interest or discount is an important fact to consider. Many of these drafts are drawn to run for periods of 60, 90, and even 120 days after sight. Since payment on such a draft cannot be required before maturity, the investing purchaser of the draft is in the position of a lender or investor until then, unless, of course, he sells to another. As a lender or investor, he will wish to get interest on his investment, and since the amount he is to receive at

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maturity is definitely fixed, he can secure interest only by paying somewhat less than this amount when he buys the draft. In short, the investing purchaser must discount the draft for the time it has to run, and the amount of this discount will depend upon the rate of discount or the rate of interest. Since the investing purchaser is sure to discount the draft, the exchange bank which buys it in the first instance, intending to have it sold in the exchange market, must also discount it. Thus, even if exchange here, on England, were above par, say \$488.65 = £100, a draft for £100 having some time to run might, because of the element of time, be selling for \$482.

It may be noted in passing that an importer can, in effect, secure a cash discount on his purchases by remitting a 60-day or 90-day draft. Suppose he has purchased £100 worth of goods in London, payment to be made in 90 days. If it is agreed that he shall remit, he can, just before maturity of the debt, buy a draft and send it. But he can also, if he prefers, buy immediately a draft payable in 90 days. If he does this, he will get the draft at a discount. His goods will cost him less because he is prepared to pay at once. As a matter of fact, banks frequently sell such time drafts to importers.

§ 2

How Long Drafts on Foreign Countries are Held as Investments by American Banks

The fact that many drafts run for periods of several months and, being purchased at a discount, yield interest to the holders of them, makes these drafts desirable as short term investments. Sometimes the bank which

originally purchases long drafts, in the "drawing" country, prefers to realize this interest, rather than to have such drafts sold at once in the discount market of the "accepting" country. Let us suppose that for a time the discount rate on safe drafts, in the German market, is 7 per cent, while conditions of business in the United States are such that American banks cannot earn more than about 5 per cent on their capital used at home. Under these conditions, an American bank purchasing drafts on ~~Germany~~, having some time to run, would probably not send them to Germany for immediate discount at the comparatively high rates there prevailing; but would be more apt to hold them in its own vaults, or have them held for its account by its German correspondent, until maturity or near maturity, in order to realize a larger sum.

Before describing the method of procedure commonly followed when drafts on foreign countries are held in its own vaults for investment by an American bank, it is essential to note that bills of exchange or drafts used in international trade, are generally made out in duplicate, the different copies being known as firsts and seconds. This has long been the custom in such trade, as a safeguard against possible loss or miscarriage of one of the drafts. Whichever draft first reaches its destination is presented for acceptance, and when it is paid the debt is cancelled. Extra copies of bills of lading and other documents may also be made.

Consider now the procedure which may be followed by the investing American bank in holding the drafts on Germany.¹ On the day of purchase by an American

¹ Described in Margraff, *International Exchange*, Chicago (Fergus Printing Co.), 1903, p. 61.

bank of drafts on German banks or merchants, the "firsts" of these drafts or bills of exchange are not indorsed by the American bank to the order of its German correspondent, as would be done if the drafts were to be sent over for immediate discount and credit or for holding abroad subject to cable order. On the contrary, there are written on the faces of these firsts the words "for acceptance only." Then the German correspondent bank to which the drafts are forwarded, is requested to have them "accepted," and to hold them subject to the call of the seconds properly indorsed by the American bank. Any duplicate documents, such as duplicate bills of lading, attached to the seconds, are detached and sent to the German correspondent bank, which is instructed to turn these documents over to the drawees provided the latter accept the drafts. The seconds, clean of all other papers, are kept by the investing American bank. On the face of each of these seconds is written: "Accepted firsts held by —," giving the name of the bank to which the firsts were sent. The American bank gets as profit the difference between the discounted value paid for the drafts and the amount realizable from them at maturity, minus the correspondent's commission.

When the date of maturity approaches, the American bank will indorse the seconds, presumably to the above described correspondent bank, and forward them to it for credit. As a matter of fact, the American bank need not; if it prefers otherwise, send the indorsed seconds to the foreign bank which holds the firsts. The seconds can, if occasion requires, be indorsed to any bank, for the firsts are held subject to the call of the indorsed seconds, and must be handed over (or credited, as the case may be)

on presentation of these indorsed seconds.¹ The two together constitute a completed bill.

The drafts may be so indorsed and forwarded to the correspondent bank for discount and credit at any time when rates of discount make it seem profitable to send them.² They are not necessarily held until maturity. But, in any case, the amount realized (minus commission) is placed to the American bank's credit, and it can then sell drafts on this credit. Of course, the investing bank takes some risk of fluctuations in the rate of exchange. If the rate falls, the bank will get somewhat less when it sells its drafts on this credit. If, on the other hand, the rate of exchange on Germany was low when the American bank bought the drafts for investment, so that they could be purchased more cheaply, and is high when the bank is ready to sell its own drafts on the credit secured (at maturity or before), then the bank will realize an additional profit.

But the American bank, even if desiring to avail itself of higher interest rates existing temporarily in Germany, will often prefer to indorse the drafts it has purchased to its German correspondent, and have them held by the latter, after acceptance, subject to instructions by cable. An advantage of this method lies in the possibility of immediate sale at any time before maturity if low discount rates make it desirable to have the drafts sold. If to have them sold does not appear to be profitable, they can be retained till maturity for account of the remitting bank.

¹ Margraff, *International Exchange*, p. 65.

² *Ibid.*, p. 63.

§ 3

Influence on the Price of Long Drafts, of Interest Rate in Drawing Country and of Interest Rate in Country Drawn Upon

We have seen that the prices of bills of exchange, other than sight bills, depend upon the rate of interest. We have also seen that bills of exchange involve two trading countries; and in the previous section attention has been called to the fact that the rate of interest in one such country may be different from the rate of interest in the other. Which of the two rates of interest or discount will, in such a case, determine the price of a bill of exchange drawn in one country on the other? ¹

In the first place, let us suppose interest to be comparatively high in the country where the bill in question is drawn, say the United States, and comparatively low in the country on which it is drawn, say England. On this assumption, the amount of the discount, and, therefore, the price of the draft, will depend on the rate of interest or discount in the country on which the draft is drawn, viz., England. For if the rate of discount in England is very low, then the draft will sell, in England, for a high price, that is, for a price comparatively near the maturity value. And since it will thus sell in the English discount market for a high price, therefore the American bank which first allows cash for it to a mercantile or other establishment, can afford to pay a high price for the draft. The American bank which buys the draft does not need to wait until maturity to realize on it, but can have it discounted immediately on its arrival

¹ The reasoning here followed is that of Goschen, *The Theory of the Foreign Exchanges*, third edition, London (Effingham Wilson), 1896, p. 137.

at London. The American bank does not need to lose, for a long period, the use of its capital. As a consequence, competition among American banks will force up the price of such drafts to somewhere near what they will bring in the English discount market. Our conclusion must be that if the interest rate in the country drawn upon is the lower, this interest rate determines the price of long drafts in the drawing country also.

But suppose, on the other hand, that the rate of interest is higher in the country drawn upon, say England, than in the drawing country, the United States. On this hypothesis, a draft on England would be discounted in England at a comparatively high rate, that is, would bring a relatively low price. Would its price be equally low in the drawing country? Certainly if the purchasing bank in the United States intended to send the draft at once abroad for discount, such a bank could not afford to pay more. To do so would mean a definite loss. But, on our present hypothesis, a draft purchased at the low price based on the discount rate in England, will yield a greater return on the investment than the prevailing rate of interest in the United States, the drawing country. Competition among banks in the drawing country, desiring to invest in such bills of exchange, may, therefore, raise the price of the draft slightly above its value in the country drawn upon; for even then it will bring a larger return by way of interest than is being realized generally in the drawing country. The seller of the draft may hope to get for it a little more than the price it would bring in England, while the purchasing bank realizes more than the rate of interest in the United States, enough more to induce this bank to buy and hold the draft as an investment, or have it held for its account

abroad. When, therefore, the rate of interest is lower in the drawing country, the price of the draft will be determined, at least in small part, by that rate of interest. It should be added that if conditions change during the life of a draft, so that interest is lower in England, such a draft held here as an investment is likely to be sent there for immediate discount at the high price realizable.

As a matter of fact, the discount rate in London, as also in other great European centres, is almost always lower than in New York. The usual rule, therefore, is for American banks to have their drafts on England discounted there at once. Their capital can be more profitably invested at home than in holding long drafts on English debtors. On the other hand, English banks do not have long drafts which they buy on Americans, discounted in the United States. The absence, here, of a rediscount market, makes it practically impossible for them to do this, though the usually higher rates of discount prevailing in the United States might, in any case, disincline them to have such drafts sold on this side. There are, in practice, very few long bills drawn upon the United States, and such long bills as are drawn upon this country are usually held till maturity, for account of the foreign remitting banks, by their American correspondents.¹

§ 4

How and Why the Bank Discount Rate Affects the Price of Demand Drafts and the Flow of Specie

Changes in the relative rates of interest in different countries affect, temporarily, rates of exchange and the flow of specie; though such changes in relative rates

¹ See Ch. III (of Part I), § 8.

of interest do not permanently affect the international distribution of specie, independently of comparative price levels. For example, much is said of the influence on the rate of exchange and on the flow of gold, of the Bank of England discount rate. If the Bank of England, because of too rapidly expanding loans or because of depletion of reserves, raises its rate of discount, being followed in this move by the other English banks, its doing so has a tendency to lower the rate of exchange in England on the United States and other countries, and to raise the rate in the United States and elsewhere on England. It has this effect because the increased interest in England tempts to investment there rather than in the United States. English banks are more likely to invest current funds at home, and may even draw on debtor banks in the United States and other countries. American and other banks may be tempted to make short term loans in England or to hold or have held until maturity, long bills which they would otherwise have immediately discounted. This holding of drafts until maturity will compel them to buy more drafts on England than otherwise would be necessary, in order to maintain their usual balances. The general result of a high discount rate in England is, therefore, a high rate of exchange on and a flow of gold to England.¹ Similarly, a sharp rise in the discount rate in New York would tend to produce elsewhere a high rate of exchange on New York, and would tend to cause a flow of gold to New York.

But we have seen that the flow of gold from country to country is determined by comparative prices of goods. If, because of a high discount rate in England, gold flows

¹ Goschen, *The Theory of the Foreign Exchanges*, third edition, pp. 129-140.

to England in large quantities, so that prices rise there and fall here; then England becomes a good place to sell to, and the United States (and other countries) by comparison a good place to buy from. The gold will therefore flow back for goods until prices are, relatively, what they were before. Americans, or American banks, who have invested in England because of the high rates of interest there, will have invested, in fact, not money but other capital.

But at this point a qualification must be made, based on the fact that the bank rate of discount influences, indirectly, the prices of goods. The bank discount rate influences prices by affecting credit. It was pointed out, in Chapter II (of Part I),¹ that the general level of prices in a modern industrial and commercial community or country is determined not alone by the quantity of money and its velocity of circulation and by the volume of trade, but also by the amount and velocity of bank credit. The relationship set forth was expressed in the equation,

$$MV + M'V' = pq + p'q' + \text{etc.}$$

Ordinarily, it was shown, M' maintains a fairly constant rather than a violently fluctuating ratio to M . The total amount of this M' or bank credit in a community will depend partly on the business needs and customs of that community, but partly, also, on the quantity of such credit which the banks can safely keep in circulation with a given support of cash reserves. If lack of confidence depletes these reserves, or if banks have expanded their credit too far for their reserves safely to support, contraction of this credit is necessary. The banks discourage borrowing, and so decrease the amount

of circulating bank credit by charging higher interest to borrowers, *i.e.* by raising their rates of discount.

Suppose, then, that because of a condition of business distrust and comparatively small reserves, the Bank of England and other English banks raise their rates of discount. As a consequence, there is a fall in the rate of exchange on New York, and, in New York, a rise in the rate on London. There follows a flow of gold to London and the bank reserves there are replenished. But this gold does not, at least for the time being, raise English prices and result in a corresponding flow of gold back to the United States (and other countries); for the increase of the bank charges on loans discourages borrowing from banks, and so tends to decrease M' . In the equation, $MV + M'V' = pq + p'q' + \text{etc.}$, for England, the p 's may not be at all increased or may even be decreased.¹ Only when bank credit, in England, is again allowed to expand, will the full effect of the inflow of gold be felt in higher prices. So long as high discount rates keep the total of circulating bank credit in England less than before in relation to money, the inflow of gold does not so much raise prices as substitute itself for bank credit. Hence, gold will not flow out again, for goods.²

¹ Cf. Goschen, *The Theory of the Foreign Exchanges*, p. 129, where this idea, though not developed, seems to be implied.

² Just before the outbreak of the European war now (August, 1914) in progress, the efforts of European investors to dispose of securities for gold and the closing of the principal bourses of the world, caused a flood of sales on the New York stock exchange, large purchases of these securities by Americans, and an unusually strong tendency for gold to flow abroad. In view of the suddenness and violence of the movement, it was perhaps not unwise that the New York stock exchange should be temporarily closed (see *New York World*, August 1, 1914) and that the sale of securities here by foreigners should thus be made difficult. It is true that the flow of gold abroad (and we are not here concerned with any other reason for the closing of the exchange) is not ordinarily a proper cause for alarm, can be checked by a rise in bank discount rates if such a check is necessary, and will in any case, if long continued, give rise to a re-

§ 5

Effect of a Panic in One Country on Conditions in Other Countries

Since prices and interest rates in different countries are related, a panic in one country cannot usually be altogether without effect on other countries having close commercial relations with it,¹ though these other countries may not be affected acutely. When, for any reason, in a country of large commercial importance, business confidence gives place to acute distrust, and the banks, with reserves depleted or fearing that the reserves will be depleted, raise their discount rates, their action will affect discount rates in commercially related countries. The strain on the bank reserves of the first country, and the rise of the discount or interest rate, tends to draw gold from other countries.

This will tend to deplete the bank reserves of those countries in relation to circulating bank credit. Either the gold will come directly from these bank reserves as when it is drawn from the great central banks of Europe for export, or it will come indirectly but just as surely from bank reserves, as when gold is bought for export from a United States subtreasury and is paid for by lawful money which might otherwise be used as reserves.²

turn flow. Yet so unprecedented a movement as the recent one here under discussion, might conceivably, if met only by a rise in the discount rate (which would also have to be great and sudden), dangerously and, considering the probable temporary nature of the crisis, unnecessarily disturb credit conditions.

¹ Cf. Fisher, *The Purchasing Power of Money*, New York (Macmillan), 1911, p. 267.

² Even if the gold is purchased with bank credit, the reserves become smaller in *proportion* as compared with the total amount of such credit; and they tend (since, as we have seen — Ch. II, § 5 — business men keep some relation between their bank accounts and cash assets, and will draw out cash if the latter become relatively too small) to become absolutely smaller.

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The conclusion is that in any case the banks in those countries from which the gold is drawn, will also have occasion to raise, somewhat, their discount rates, in order to keep their reserves and their deposits (and notes) in proper relation to each other. And if contraction of credit causes a fall of prices in one country, the mitigated effect of this, at least, must spread to other countries. It does not follow that a severe panic in one country must be accompanied by or succeeded by a correspondingly severe panic in others; but only that in each of a group of commercially related countries there will be practically simultaneous rises in price levels, nearly simultaneous high prices and high discount (interest) rates, and substantially simultaneous decline. The goodness of its banking system (and other facts), may make the changes more gradual and less severe in one country than in others, but is not likely to prevent the changes altogether.

§ 6

Exchange between Two Countries when One has a Gold and the Other a Silver Standard

An excess production of gold in any country raises prices there compared to prices in other countries, encourages buying goods in other countries, and therefore raises the rate of exchange on other countries. Export of gold follows. The introduction of a cheaper standard of value has the same effect. A large coinage of cheaper money, *e.g.* silver at a ratio of 16 to 1 (which would greatly overvalue silver and lead to a large coinage), would increase *M*. Prices would rise and the value of money would fall. Goods would therefore be purchased abroad. The rate of exchange on foreign coun-

tries would rise and gold would be exported. As long as the silver and gold both circulated and were generally acceptable for goods at the legal ratio, the rate of exchange would not rise much above the gold export point. But if this ratio encouraged the continued coinage of silver, the gold would eventually be entirely driven out of the currency of the silver coining country. Then the rate of exchange would rise even higher, for prices in the silver country would continue to rise until silver coin had no greater value than silver bullion. But once the gold had been entirely driven out, there could be no further effect on the amount of money and therefore on prices, in other countries,¹ produced by the coinage of silver. Consequently, the prices of the silver country would be permanently higher than formerly, compared to prices abroad, and its money standard of less value. Instead of the rate of exchange on England, supposing the United States to be the silver standard country, averaging $\$486.65 = \text{£}100$, it might average $\$973.30 = \text{£}100$, or some other new and higher rate. The rate of exchange would have risen tremendously. In fact, such a rise in the rate of exchange is good evidence of a cheaper or depreciated currency. But the rate of exchange, though in figures much higher than before, would not necessarily be above par. Instead, there would be a new par. $\$973.30 = \text{£}100$ might have become this par. Exchange would thereafter fluctuate about this new instead of about the old and lower par.

Par of exchange would no longer be steady. For with one country on a silver standard and the other on a gold standard, the monetary unit of one, *e.g.* the dollar, would have no fixed relation to the monetary unit of the other,

¹ See, however, remainder of this section (6).

e.g. the pound. The value ratio of these units would vary with the value ratio in the bullion markets, of silver and gold. But exchange in neither country, on the other, could go above par by much more than the cost of shipping specie. Exchange in the silver standard country on the gold standard country, would be limited by the cost of gold in terms of silver, plus the cost of shipment.¹ *Vice versa*, exchange in the gold country on the silver country, could not go higher than the cost of silver in terms of gold, plus the cost of shipment.

How would trade balance when there was no longer, between two such trading countries, the influence of price relations in the same precious metal, to make the flow of goods one way balance a return flow? The balance might then be brought about by the flow of gold one way, and of silver the other. If we should for a time buy more in England than the English of us, and had a net indebtedness to meet, we might purchase gold in the bullion market here, with which to settle. This (assuming the United States to be on a silver standard) would not directly affect our prices, but would increase the quantity of money and tend to raise prices in England. In this country it would tend to make gold bullion scarce and dear as compared with our silver money and with other goods. A given amount of English money would buy more American dollars than before, and would buy more American goods than before, as compared with the goods it would buy in England. That is, par of exchange in England on the United States would be lower. There would also, of course, be some tendency for prices in one country to fall and in the other to rise because of the flow

¹ Goschen, *The Theory of the Foreign Exchanges*, pp. 76-81; cf. Clare, *The A.B.C. of the Foreign Exchanges*, London (Macmillan), 1893, pp. 139-142.

of goods as well as because of the flow of money. The greater supply of goods in the importing country, the United States, in relation to money, would tend to lower the price level; while the outflow of goods from the exporting country, England, would tend, there, to raise the price level.

The fact that a given amount of English money would buy more American goods than before, would encourage English buying here; while the less purchasing power over English goods, of American money, would discourage American buying in England.¹ Hence trade would reach equilibrium or would flow, for a time, in the opposite direction.² Exchange in England on the United States would rise above par, and specie would be shipped.

If exchange on England should be below par and the flow of specie should be from them to us, the same principle would apply. The silver sent to us in settlement of balances would tend to raise our prices and lower the value of silver in the United States. Its exportation from England would tend to make silver in England relatively scarce and dear. As a consequence, a given number of American dollars would buy more pounds than before and would buy more goods in England than

¹ Cf. Bastable, *The Theory of International Trade*, fourth edition, London (Macmillan), 1903, pp. 59, 60. See also Professor Marshall's "memorandum" on the effect in international trade of different currencies, Appendix to *Final Report of the Gold and Silver Commission*, 1888, pp. 47-53.

² If we suppose American silver exported to buy English gold for settling the balance against us, because of a more favorable price of gold in England compared to silver, we shall nevertheless reach the same final conclusion. On this supposition, the outflow of silver would tend to lower American prices, raising here the value of silver. In England, silver would become of less value in comparison with gold. A given sum of English money would buy more American money, and would buy more American goods than before as compared with the goods it would buy in England. Therefore, the flow of trade must reach equilibrium or even be temporarily reversed.

before as compared to what they would buy here. The surplus flow of goods from the United States to England would, other things equal, be brought to an end. If, therefore, two trading countries have, respectively, a silver and a gold standard, the laws of trade between them are not greatly different than if both have the same standard. It is still true that each will buy goods of the other; and it is still true that an excess flow of trade in one direction tends so to change monetary and price conditions as to bring its own termination.

§ 7

Exchange between Two Countries when One has a Gold and the Other an Inconvertible Paper Standard

Let us now suppose the case of a paper standard, *i.e.* paper money not redeemable in specie, in one of two trading countries, and a gold standard in the other, as with the United States and England during our Civil War period. The rate of exchange in the paper money country on the other, would depend chiefly on the cost of gold in terms of paper, and therefore would rise as the paper money depreciated in relation to gold.¹ Thus, during the Civil War, exchange in the United States on other countries, *e.g.* England, rose to a very high figure, because of the depreciation of the greenbacks. Conversely, the rate of exchange in the gold standard country on the country with a paper standard would depend mainly on the cost of this paper money in terms of gold, and therefore would fall as the paper money depreciated.² In the paper money country, the upper limit of exchange on the other cannot much exceed the cost of purchasing

¹ Goschen, *The Theory of the Foreign Exchanges*, pp. 69, 70.

² *Ibid.*

gold with paper, plus the cost of shipping the gold.¹ If we regard exchange between two such countries as at par (though the paper *money* might be depreciated far below par) when the money of the paper standard country will buy just as much exchange on the gold standard country as it will buy gold at home,² then we may say that exchange could rise above par by the cost of shipping specie.³ In general, we may say that exchange might either rise above or fall below this par, by the cost of specie shipment, just as it might rise above or fall below par by the cost of specie shipment if both countries had the same specie as standard.

When one of two countries has inconvertible paper and

¹ *Ibid.*

² This is the logical though not the ordinary use of the word "par" in relation to exchange, when one country has a depreciated currency. It is customary to regard as par what would be par if there were no depreciation. Strictly speaking, however, the departure from this rate, due to depreciation, means a departure of the *money* from par, rather than of *exchange*.

³ This is not inconsistent with Bastable's statement (*Theory of International Trade*, pp. 87, 88) regarding the possible rise of the exchanges on other countries, in a country having an inconvertible but not depreciated paper money. In such a case, it is said, if a sudden demand for exchange and, consequently, for gold to export, is coincident, in the paper money country, with a temporarily inadequate supply of gold, exchange may rise above the usual specie shipping point. But though the rate may go up beyond the usual shipping point, it can hardly be said to do so if the paper money is in no sense depreciated. Though the paper money may not have depreciated in relation to goods in general, and may not have depreciated, permanently, in relation to gold, yet, for the time being, it has depreciated compared to gold in the paper standard country. Under such circumstances, however, it may fairly be emphasized that the rise of exchange is due rather to a local rise in the value of gold than to a fall in that of the paper.

A special case discussed by Goschen (*The Theory of the Foreign Exchanges*, pp. 70-72), is that of a country which, having an inconvertible paper money, has also forbidden the export of the precious metals. In such a country, exchange on others cannot be prevented, by shipment of specie, from rising above the gold shipping point, since the law forbids such shipment. Except as the law may be evaded, a rising exchange rate can then only be limited by a retardation of imports and a stimulation of exports (see § 9 of this chapter) or, for a time, by borrowing from abroad (see Goschen, *Foreign Exchanges*, *loc. cit.*).

the other a gold standard, the effect on prices, produced by the flow of specie consequent on trade between them, could occur only in the gold standard country. When the paper standard country has a balance to pay, gold may be purchased with this paper money and exported (or, which for purposes of our discussion amounts to the same thing, imported by the gold standard country). This will raise prices in the gold standard country to which the gold flows. If the trade, however, is between a paper standard country and several gold standard countries, the effect on the latter will be more diffused and their prices raised but slightly. But the outflow of gold bullion from the paper standard country will tend, if long continued, to make gold in that country scarce and dear in relation to other desired goods. A given amount of gold will buy not only more paper money, but also more of other goods than before. Drafts drawn on the gold standard country, or remitted by its people, in payment for goods purchased in the paper standard country, will represent less gold than previously for the same goods bought. Therefore, more goods will be purchased in the paper standard country by the people of the other, and gold will flow back again to the former country. This tendency is accentuated by the flow of goods. If, at first, goods are imported by the paper standard country, the larger supply of goods in that country, relative to the paper money *and to gold*, tends to make the prices of these goods lower in either standard. In the exporting country, relative scarcity of goods tends to make prices somewhat higher measured in gold. Hence, for this reason also, more goods are bought with gold in the paper standard country, and gold tends to flow to that country.

§ 8

Exchange between Two Countries when Both have Inconvertible Paper Standards

Suppose, next, that there is in each of two trading countries an inconvertible paper standard. Then the rate of exchange in either upon the other, so long as gold is the medium for settling international balances, will depend on the value of both currencies in relation to gold. Suppose the two countries to be the United States and France. Then, in the United States, exchange on France would rise if American money depreciated compared to gold (French money remaining the same), or if French money appreciated in relation to gold (American money remaining the same), or if, simultaneously, American money depreciated and French money appreciated. The same causes would make exchange in France on the United States fall. The rise in exchange on France and the fall in exchange on the United States would be limited by the depreciation of the American money plus the appreciation of the French money, plus the cost of specie shipment. For if American money depreciated one-half compared to gold, exchange on France (excluding the cost of gold shipment) would double, since it would take twice as many American dollars to buy the same amount of gold for shipment to France, and, therefore, to buy the gold equivalent of a certain number of francs. Likewise, if French money doubled in value in relation to gold, exchange on France would double, since it would take twice as many dollars as before to buy the double amount of gold which was now the equivalent of a given number of the doubled value francs. Above this amount, exchange could rise by the cost of shipping gold.

Under the assumed circumstances, the currencies of the two countries would be unrelated to each other. No amount of buying by the merchants of the United States, in France could, through a flow of money, lower American or raise French prices, for American money would not be legal tender in France or (being paper) of any intrinsic value there. Neither could French buying in the United States produce, by the flow of money, the reverse consequence. How, then, would excess buying by one country in the other eventually cause more buying by the second in the first? It would have this effect through the flow of gold and the consequent influence on the value of gold in the two countries; and also through the flow of goods and the effect of that flow on prices in the two countries and so on the relative values of gold, in both countries, in relation to goods.

If the United States should buy more of France in any period than it sold to France, gold would flow to France. Gold would therefore come to have more value in the United States, where it was scarce, and less value in France, than before. A given number of francs would buy more gold, and a given amount of gold would buy more dollars. Par of exchange, in the sense here used, would be lower in France on the United States, and higher in the United States on France. This means that in terms of French money, goods could be purchased in the United States more cheaply than before; while in terms of American money, French goods would be more expensive than before. As a consequence, the French would buy more American goods, and Americans would buy less French goods; the rate of exchange in France on the United States would rise above this low par, and in the United States on France it would fall; and gold would flow back from France to the United States.

In addition, if the United States should buy a net balance of goods from France, in any period, this would tend to make goods more plentiful in the United States and less so in France, in relation to gold, so that, for this reason also, it would become more profitable than before to send gold from France to the United States for goods. 2

§ 9

Exchange between Two Countries, Assuming Effective Prohibition of Specie Shipment

So far we have assumed, even when discussing trade between countries having unrelated currencies, that gold or silver would be used to settle international balances. But suppose that the mediæval theory of prohibiting the export of specie were still in vogue and were commonly applied. Would there be, then, any limits to the fluctuations of exchange (assuming obligations still to be settled by using drafts), and would there still be a tendency for the trade in opposite directions, to balance? Under usual existing conditions, the fluctuations of exchange with any country are limited, as we have seen, by the cost of shipping specie. Any further rise or fall is checked by specie shipment and by the consequent effect on supply of drafts, or demand for them, or both. But if specie shipment were prohibited, and prohibited at all effectively, the limits to exchange fluctuations could not be so narrow. The rate of exchange, for example, in the United States on England, if the balance of obligations were markedly in England's favor, could then go considerably above \$488.65 without at once increasing the supply of or decreasing the demand for drafts on England, to such an extent as to stop the rise. Since

gold could not be exported, Americans owing money in England would have to settle by remitting drafts or by redeeming drafts drawn against them.¹ In the latter case, American banks must purchase drafts on England in order to settle with correspondents, since the alternative of shipping specie is excluded. Drafts on England might, therefore, sell at a rate which American debtors and debtor banks would refuse to pay if they had the forbidden alternative.

Yet there would still be limits, though wider and perhaps less definite ones, to the fluctuations in the price of drafts. The high price of drafts on England would encourage and stimulate the sale of American goods in England and would discourage buying goods from England. Goods which would bring, in England, say £100, but which would not ordinarily be sent there for sale, because that sum yielded no profit, might be exported if a draft on England for £100 would sell, here, for \$495. And the sale of goods in England, thus stimulated, would tend, by increasing the supply of drafts on England, to prevent further rise in the prices of such drafts. Also, goods which could be purchased in England for £100 and which, if \$486.65 would buy a draft for £100 and so would pay for the goods, would be bought in England, very probably would not be bought if the draft necessary to pay for them cost \$495.

Conversely, even though exchange on England fell below the gold shipping point, because of a net balance owing from England to us, combined with an English prohibition on the outflow of gold from England, such a fall in exchange would not be without limit. For it

¹ Renewal of credit, use of finance bills, etc., would of course serve as temporary expedients to postpone settlement.

would encourage buying in and discourage selling to England. Goods which could be sold in England for £100 and which it would ordinarily pay to ship there, it might not be profitable to ship if a draft on London for £100 would only realize, in New York, \$460 or less. The consequent refusal to ship goods to England would tend to decrease the supply of drafts on England and to prevent further fall in their prices. At the same time, it might become more profitable for us to buy goods in England, paying for these goods by purchasing and mailing the low-priced London drafts and so adding to the demand for such drafts.

During the summer and fall of this year (1915) drafts on the principal European belligerent countries have been selling at rates far below the ordinary, gold-shipping points. Sight drafts on London, for instance, have sold at 4.70, at 4.60, even at 4.50, and corresponding discounts have ruled with respect to other European centers. It would seem that these discounts cannot be sufficiently explained by citing the war risk of gold shipment, since war risk insurance is but 1 per cent in British bottoms and in American vessels is even less. This risk, in addition to the ordinary cost and risk of shipment, might account for a rate on London as low as 4.80 or 4.79, but hardly for a rate much lower. There seems no escape from the conclusion that interference with gold exports from the countries at war is an important factor in the problem. Such interference there has been and is.¹ For example, France has forbidden

¹ The more important commercial countries engaged in the present war, *e.g.* Great Britain, France, and Germany, would appear thus far (October, 1915) to have been successful in preventing depreciation of their paper money, in the commonly understood sense of depreciation in relation to gold. The success which they have had in this direction is probably due, in considerable measure,

any person other than the Bank of France to export gold, and the Bank of France is controlled by the government, which appoints its manager. Great Britain has not formally prohibited the export of gold; but probably no English bank would venture, under existing circumstances, to export gold without the approval of the Bank of England, and the Bank of England will arrange for the export of so much gold only as its officials and the government think may wisely be parted with. Hence the ordinary free flow of gold has ceased, price levels in America and in Europe are not closely related through such a flow, and exchange rates can fall, and have fallen, far below par. To such an extent has this occurred that we should perhaps soon cease to find it profitable to sell food supplies, munitions, etc., to the Entente Allies, had they not arranged to correct matters, in part, by borrowing of us heavily through the sale of their bonds in the United States.

When balances are habitually settled by the shipment of gold (or other precious metals), as in modern trade, the limits of fluctuation in exchange are narrow because gold, having large value in small bulk, can be shipped for a small per cent of its value. An excess of trade in one direction, therefore, acts largely through a flow of gold as an intermediate cause, in bringing about a balancing flow of trade in the contrary direction. This flow of gold affects prices in both countries, if both have the gold standard. In any case, it affects the relative

to the fact that they will not allow gold to be exported. They have thus narrowed the market for gold and have, in effect, cheapened it along with the paper. Hence, the paper money may not appear to be depreciated even though, in the sense of its purchasing power over goods, it is so. It is not denied, of course, that, under all the circumstances, a belligerent government may find it desirable to husband its stock of gold and avoid, if possible, any depreciation of the sort usually meant by the term.

purchasing power of gold in these countries, and the amount of goods that the currency of the one, by being first exchanged for gold, will buy in the other, compared to what it will buy at home. There follows, as a result of this change in relative prices or in relative values of the two money standards, a change in the flow of trade. This change in the flow of trade is, therefore, in large part, but an indirect consequence, through the flow of gold, of a rising or falling rate of exchange. But if the flow of specie is effectively prohibited, and the fluctuations in exchange are, in consequence, greater (assuming drafts to be still used as the chief means of settling obligations between countries), the high and low prices of drafts will act with greater force *directly* on the flow of trade.

It should be emphasized that high and low exchange have always, to some extent, this direct influence. If a draft on England for £100 will sell for \$488 in New York, it may be profitable to export goods to England which it would not pay to export if exchange were low. Similarly, if drafts on England for £100 can be secured for \$484.70, it may be worth while to buy goods there which, if exchange were higher, would not be purchased. A flow of trade in one direction has always, then, some slight tendency to bring about its own termination through affecting the rate of exchange, and thereby the direction of trade.¹ But this more direct influence is greater, because the possible fluctuations in exchange are greater, if and when specie cannot be exported from either of two trading countries. Our conclusion is that whatever the relation of the currencies of two trading countries, and whatever the mechanism of settling balances, or whatever the restrictions on settlement by the use of any

¹ Cf. Ch. V. (of Part I), § 6.

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special commodity, *e.g.* gold, an excess flow of trade in one direction introduces always a tendency towards an opposite and balancing flow.

§ 10

The Effect on the Rate of Exchange of High Import and Export Duties

Let us now give very brief consideration to the effects on exchange of high import duties, *e.g.* the so-called protective tariff. The protective tariff is a high tax on imports, intentionally made so high as to prevent or decrease imports, and encourage buying at home. For the time being, the country adopting such a policy will export an excess, the rate of exchange on other countries will be low, and specie will flow in. Then prices rise in the protectionist country in relation to prices elsewhere, exports are checked, and an equilibrium is reached; and, in the absence of other disturbing causes, exchange will again average par.

On the other hand, the first effect of a high tariff on exports would be to decrease exports. For a while imports would be in excess. Therefore, the rate of exchange would rise. Eventually specie would flow out, prices would fall, imports and exports would again balance (other disturbing factors absent), and there would no longer be the tendency caused by excess imports for the fall of prices to continue.

§ 11

Summary

In this chapter the attempt has been made to bring together various considerations regarding exchange,

which seemed to have no proper place in the chapters preceding. To begin with, a distinction was made between sight drafts and those payable some time after sight. A study of the pure rate of exchange has to do only with the former. The prices of the latter depend also upon the rate of interest. Two possible methods of procedure when an American bank invests, for the interest, in drafts on foreigners, were described. It was shown that the prices of long drafts may be influenced by the rate of interest in the drawing and in the accepting country. If the rate of interest in the accepting country is the lower, this rate determines the prices of long drafts; but if the rate of interest in the drawing country is the lower, purchase of the drafts by investors or investing banks in that country may make these drafts sell for somewhat more than the higher rate of interest in the accepting country would otherwise allow.

Consideration was given to the influence, on the pure rate of exchange and on the flow of specie, of changes in interest or discount rates in different countries. It was seen that a rise of the bank discount rate in any country tends to create, elsewhere, high rates of exchange on that country and a flow of specie to it. But it was also seen that the chief effect of such a rise in bank discount is to check undue credit expansion or reduce excessive credit. Only as it has this effect, will the inflow of specie be prevented from so raising prices as to result in a subsequent corresponding outflow. Since interest rates and prices in different countries are related, it follows that a financial panic in one country must produce some, though perhaps comparatively mild, effects upon other countries.

The rates of exchange between countries having different monetary standards were next considered. If

one country has gold and another silver, exchange can fluctuate as the ratio of value of silver to gold fluctuates, and, in addition, by the cost of specie shipment. If one country has gold and the other has inconvertible paper, exchange in the latter on the former can rise (and in the former on the latter, fall) by the amount of depreciation of the paper in terms of gold, plus the cost of gold shipment. If both countries have inconvertible paper, exchange in either on the other can rise by the amount of depreciation in the currency of the first plus the amount of appreciation in that of the second, plus the cost of specie shipment. Whatever the monetary standard or standards of trading countries, exchange can fluctuate beyond the above assigned limits, if the movement of specie is effectively prohibited. But whatever the standard or standards, it appeared that trade cannot flow continuously in one direction without introducing a tendency to a reverse flow. By acting on relative price levels, or on relative values of currency in relation to gold, or only on rates of exchange, the surplus flow in one direction will eventually bring itself to an end.

Lastly, brief attention was given to the effects on exchange, of import and export duties. The former make exchange on other countries temporarily lower. The latter make it temporarily higher. In the former case, equilibrium is reached, after an inflow of specie, with a higher level of prices in the country levying the duties. In the latter case, when, after an outflow of specie, equilibrium is again reached, the level of prices in the duty-levying country is lower.

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$$\begin{array}{r} 12 \frac{1}{2} \\ 9 \frac{1}{2} \\ 14 \frac{1}{2} \\ 14 \frac{1}{2} \\ 6 \\ 10 \frac{1}{2} \\ 16 \frac{1}{2} \\ 8 \\ \hline 32 \\ 20 \end{array} \quad \begin{array}{r} 22 \\ 15 \frac{1}{2} \\ \hline 16 \frac{1}{2} \end{array}$$

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